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ARTMENT OF TRANSPORTATION

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U.S. DEPARTMENT OF TRANSPORTATION

13th Annual Report

Fiscal Year 1979

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Summary

Summary

The primary responsibilities of the U.S. Department of Transportation are to assure the coordination and effective administration of federal transportation laws and to develop policies and programs which will result in the provision of fast, safe, and convenient transportation at the lowest possible cost.

The following paragraphs summarize a few of the Department's fiscal year 1979 activities in carrying out those responsibilities. More detailed accounts of these and other Departmental activities are given in the progress reports which follow this summary.

Transportation Policy

The Secretary issued a statement on national transportation policy on February 7, 1979. The statement indicated that containing inflation, by increasing productivity and restraining the consumption of petroleum, had become the most important consideration in transportation policy.

Fuel Transportation

The Department played an active role in several projects to improve fuel transportation, particularly the movement of coal by rail and highway, as well as promoting the construction of coal slurry pipelines.

Transportation Safety

The Department continued to stress all aspects of transportation safety, and more than 6,000 people received safety training at the Department's Transportation Safety Institute.

Aviation accident trends continued to be downward, except for increasing air taxi accidents. The number of people killed in train accidents increased slightly, but the trend appeared to be continuing its long-term decline. Vehicular traffic fatalities continued a four-year increase, but the traffic fatality *rate* remained near the record lows of recent years. Gas pipeline related casualties declined somewhat, but the upward trend appeared to be continuing.

Inspector General

As required by the Inspector General Act of 1978, the Department consolidated all of its audit and criminal investigation activities in a new office of Inspector General. In addition to detecting fraud or abuse, the new office was to identify opportunities to reduce costs and improve efficiency.

Marine Transportation

The design of the Louisiana deepwater port was completed, and construction of the port and connecting pipeline was underway.

For the first time in a decade, calls for Coast Guard search and rescue services decreased. However, the Coast Guard still responded to more than 75,000 calls and rescued more than 5,700 people.

Coast Guard marine fishery conservation activities brought about 95 civil penalties and the seizure of 12 foreign vessels.

Overall maritime law enforcement efforts increased by about 20 percent. The number of vessels seized for carrying contraband decreased, but the amount of contraband found on the vessels generally increased. Altogether, more than 3 million pounds of marijuana and 43,000 pounds of hashish were seized.

New techniques were developed, involving the use of small computers and hand held calculators, which permitted more accurate positioning of maritime aids to navigation. As a result, the Coast Guard began developing new standards for the positioning of such aids.

The program to convert aids to navigation to solar power was expanded. Plans were being made to convert about 1400 battery powered short range aids to solar power, beginning in fiscal year 1980 or 1981.

The Coast Guard continued to improve and expand its capability to deal with maritime pollution incidents. In addition to containing oil discharges, the Coast Guard was improving its ability to deal with discharges of hazardous chemicals.

Navigation equipment requirements were increased for tankers using U.S. ports and waterways, and specifications for anti-collision equipment were being developed. In addition, the Coast Guard began an effort to develop improved ship routing and port access rules.

A total of 55.3 million metric tons of cargo moved through the U.S. portion of the Saint Lawrence Seaway. This was the third highest total in Seaway history. An 8 year study, completed in fiscal year 1979, concluded that it was feasible (from an engineering standpoint) to extend the navigation season on the upper Great Lakes to 12 months and on the Montreal to Lake Erie section of the Seaway to 10 months. Before legislating a permanent season extension program, however, a number of issues, especially environmental concerns, needed to be addressed.

Aviation

Agreements were reached with six countries to permit more fare competition and to reduce service restrictions on international aviation. At the same time, new legislation gave U.S. airlines new fare and route freedom in domestic service.

The calendar year 1978 air carrier safety record was very good. There were no casualties in scheduled international air carrier service, no casualties on supplemental air carriers, and only 16 casualties in scheduled domestic air carrier service.

The calendar year 1979 air carrier casualty statistics were certain to be substantially worse, as the crash of a DC-10 at Chicago killed 273 people and led to the temporary grounding of all DC-10s.

Air taxis had a record 165 casualties in calendar year 1978 and showed a sharp increase in their fatal accident rate. General aviation as a whole, including air taxis, had a record 1,690 casualties and the highest fatal accident rate since 1974. One general aviation accident, a collision between a light plane and an intrastate carrier, killed 144 people.

Early in fiscal year 1979, the Federal Aviation Administration revised the safety standards affecting air taxi and commuter airlines, in order to bring them closer to the safety standards of scheduled air carriers.

Aircraft hijacking attempts continued, and 13 domestic aircraft were hijacked during fiscal year 1979, compared to 11 the year before.

The Federal Aviation Administration began acquiring a new backup radar information system. The system was to operate as a standby at en route traffic control centers, so that it could be put into operation immediately in case of primary computer failure.

A total of $636 million was approved by the Federal Aviation Administration for airport construction and improvements.

Highways

A record $9.3 billion was obligated during the year under the federal-aid highway program as a result of new legislation permitting greater flexibility and better planning in the use of highway and mass transit funds.

The new legislation included provisions to speed up work on the interstate highway system. During the fiscal year, approximately $4.3 billion was obligated for interstate system projects. By the end of the fiscal year, all but 1,880 miles of the system were open to traffic.

A total of $177 million was obligated for rehabilitation of existing sections of the interstate system and $230 million for rehabilitation of primary and secondary system highways. The bridge replacement and rehabilitation program expanded substantially, as obligations reached a record $580 million for 1700 projects. An additional $60 million was obligated for bridges which were not on federal-aid highways.

The motor carrier safety activities of the Federal Highway Administration increased, as more than 26,000 motor carrier inspections were carried out. More than 10,000 vehicles and nearly 2,000 drivers were taken out of service.

Traffic deaths continued their upward trend in calendar year 1978 and exceeded 50,000 for the first time since 1973. Fatal collisions involving heavy trucks and deaths in motorcycle accidents both continued to show sharp increases. However, the overall traffic fatality rate (based on vehicle miles driven) was essentially unchanged.

Motor vehicle safety investigations resulted in recalls of almost 3.5 million vehicles and more than 1 million items of motor vehicle equipment.

Railroads

Train accidents continued to increase in calendar year 1978, and track defects continued to be the most common cause of train accidents. However, accidents attributed to human factors were increasing more rapidly than accidents attributed to track defects.

Train accidents involving hazardous materials continued to be an especially serious problem, with more than 1,000 accidents involving hazardous materials occurring in calendar year 1978.

The federal-state rail safety program continued to grow, as 45 new inspectors were certified during fiscal year 1978, bringing the total to 84.

The Federal Railroad Administration's state rail program provided $73 million to the states for use as operating subsidies or for rail improvements. By the end of the fiscal year, nearly 70,000 miles of rail line were eligible for aid under the program.

The northeast corridor improvement program continued to receive intensive review by the Federal Railroad Administration. At the end of the fiscal year, the Department was seeking authorization to spend an additional $750 million and to extend the program completion date to 1984.

Revenue ton miles of freight carried on the Alaska Railroad decreased by 16.9 percent, but revenue passenger miles increased by 20 percent and passenger revenue by 35 percent; so total revenue decreased by only 13 percent. All categories of freight declined, but the largest decrease resulted from the opening of an oil refinery at Fairbanks, bringing about a 41 percent decline in petroleum tonnage.

Summary

Urban Mass Transportation

On May 29, 1979, the Department issued its regulations concerning transportation for the handicapped. The regulations required that all federally financed bus systems be accessible to the handicapped within 10 years and all rail transit systems within 30 years. The regulations also set accessibility standards for other public transportation facilities.

The Urban Mass Transportation Administration approved $2.1 billion in capital assistance grants and $871 million in operating assistance grants in fiscal year 1979. The capital assistance grants included engineering and construction funds for new heavy rail systems in Miami, Baltimore, and Atlanta; for a light rail system in Buffalo; and for downtown people movers in Los Angeles and St. Paul. The first section of the Atlanta system (6.7 miles) opened in June 1979. Nationwide, capital assistance grants assisted in the purchase of 323 rail cars, 19 locomotives, and more than 3,000 buses.

Materials Transportation

Many of the Department's hazardous materials regulations were modified during fiscal year 1979 to put more emphasis on container performance and less emphasis on specific container designs. Labeling and packaging regulations were removed entirely from small packaged consumer goods.

The Department took several steps to expedite construction of the Alaska Natural Gas Pipeline, including amending its gas pipeline regulations, conducting a variety of tests, and providing technical support. Construction costs for the pipeline were expected to be over $13 billion.

Gas pipeline failures increased by 31.3 percent in calendar year 1978, compared to calendar year 1977, but gas pipeline casualties (deaths and injuries) decreased by 9.7 percent.

Progress Reports

Office of the Secretary

The Office of the Secretary provides staff and advisory support for the Secretary and supports and coordinates the activities of the various administrations within the Department. In addition, the Office of the Secretary has primary or sole responsibility for carrying out certain programs. This progress report emphasizes those programs.

Transportation Policy

On February 7, 1979, the Secretary issued a statement on national transportation policy. While continuing a previous emphasis on fuel conservation, environmental protection, safety, quality of life, and improved resource allocation, the statement indicated that containment of inflation has become the most important policy consideration.

In his statement, the Secretary said that the most effective contributions the Department could make to the inflation containment effort were to increase the transportation system's productivity and to restrain its consumption of petroleum. In addition, the Secretary stressed the need to reduce spending in Departmental programs.

Transportation Planning

Early in the fiscal year, the Department solicited comments on a proposed Departmental policy on citizen participation in state and local transportation planning. At the end of the fiscal year, guidelines for carrying out the proposed policy were being developed.

Fuel Conservation

An energy situation center was established by the Department to coordinate the allocation of truck fuel supplies. During the spring and summer of 1979, more than 125 calls from the trucking industry were being processed each day. The Department also initiated plans for increased commuter ridesharing and for conservation of fuel by off-highway vehicles.

Fuel Transportation

The Department was active in the development of plans for new fuel-related construction projects, including a proposed west-to-east petroleum pipeline and the construction of additional roads to facilitate the transportation of coal from mines to users. It was also studing the various economic, environmental, and safety impacts of increased rail coal traffic. The Department was also active in efforts to obtain legislation to reduce the constraints on coal slurry pipeline construction.

Deepwater Ports

The designing of the LOOP deepwater port off the coast of Louisiana and of the pipeline connecting it to shore was completed, and good progress was made on construction. By the end of the fiscal year, construction was about 47 percent complete, with completion scheduled for February 1981. The overall cost of the project was estimated at $608 million. Planning also continued for the Texas Deepwater Port Authority project near Freeport, Texas. A facility with a 2.5 million barrel per day capacity and a cost of $1 billion was planned for the Texas location.

International Aviation

The Department took the lead in encouraging the international aviation community, including U.S. flag carriers, to remove regulatory restraints on airline service and rates. Agreements providing for greater price flexibility and elimination of service restrictions were negotiated with Germany, Israel, Korea, Costa Rica, Singapore, and Thailand. The Department also worked to eliminate discrimination against U.S. airlines by other countries.

Regulatory Reform

The Airline Deregulation Act of 1978 increased the Department's responsibilities in international and domestic aviation. Among other things, the Department inherited the role of the Civil Aeronautics Board in authorizing subsidies for essential air service to small communities. Hearings were held in 9 states to establish criteria for such subsidies. In addition, the Department established procedures for monitoring complaints of inadequate air service.

On March 23, 1979, the Department submitted a proposed railroad deregulation act to Congress. The proposed bill would reduce government regulation of rates, entries, abandonments, and mergers. In the motor carrier field, the Department sponsored a proposed bill calling for more liberal standards of rate-making and entry for the trucking industry.

Environment

The Department continued its efforts to use transportation as a positive factor in improving urban economies and in promoting fuel conservation. As a result of these concerns, a number of proposed transportation projects were modified or were discontinued, where it appeared they would reduce employment, impair the environment, or lead to health and safety hazards. Reduction of urban noise from aircraft and highway vehicles was also emphasized. Some of the major project decisions made during the year were:

I-675, Dayton, Ohio. A significant portion of this highway was disapproved. It was concluded that the highway would have inadequate usage, that it would contribute to pulling jobs away from the Dayton urban center, and that it would contribute to low density and energy intensive types of development in the region.

I-78, Allentown-Bethlehem-Easton, Pennsylvania. This project was approved, contingent upon elimination of several interchanges and the imposition of land use controls in the vicinity of the remaining interchanges. The restrictions were imposed in order to minimize the possibility that the highway would attract new development and divert economic activity from existing urban areas.

I-235, Oklahoma City, Oklahoma. This project was approved, contingent upon development of detailed mitigation plans to reduce highway impacts on a minority community and to assure that a fair share of the benefits of highway related development would accrue to that community.

I-476, Philadelphia, Pennsylvania. A revised design was prepared for this project, calling for a smaller-scale facility with emphasis on connections to existing transit service, provision for high occupancy vehicle use, and compatibility with the surrounding community.

I-75, Atlanta, Georgia. Improvements to the existing I-75 were approved, contingent upon inclusion of high occupancy vehicle lanes and transit connections in order to minimize reliance on private auto use in the corridor.

West Bypass, Oklahoma City, Oklahoma. A portion of this proposed project was approved, but portions which would have promoted low density development and which would have had adverse impacts on a major public open space were disapproved.

During the year, the Department revised its procedures in an effort to achieve "one-stop" processing for the environmental review of transportation projects. The goal was to integrate all environmental reviews into the environmental impact statement process required by the National Environmental Policy Act. Air quality was given new emphasis in the Department's review, as part of its increased efforts to enforce transportation related aspects of the Clean Air Act. The Department and the Environmental Protection Agency continued their close cooperation and developed joint guidelines for evaluating the effect of proposed transportation projects on air quality.

Transportation For The Handicapped

On May 29, 1979, the Department issued its regulations implementing Section 504 of the Rehabilitation Act of 1973. The regulations required that all facilities financed by the Department be made accessible to handicapped persons. The affected facilities included buses, rail transit cars, airport terminals, highway rest areas, and pedestrian walkways. Under the regulations, all bus systems were to be made accessible within 10 years and subways within 30 years. Other facilities were to meet accessibility requirements in a much shorter time.

International Transportation Programs

The Department participated in the negotiation and conclusion of a number of international arrangements covering multimodal cooperative activities. Included were an extension and amendment of the memorandum of understanding concerning cooperation in transportation and transportation projects with ministerial counterparts in Canada, the Federal Republic of Germany, and Romania. In addition, a dialogue with the Peoples Republic of China was initiated by a Departmental proposal to expand the U.S.-Chinese science and technology program to include transportation.

Legislation

Major legislation enacted during fiscal year 1979 included the Surface Transportation Assistance Act of 1978, the Airline Deregulation Act of 1978, and the Amtrak Reorganization Act of 1979.

The Surface Transportation Assistance Act combined federal financial assistance for a variety of highway and mass transportation programs, providing a new flexibility in the use of highway and transit funds. The Airline Deregulation Act gave airlines new freedom to adjust fares and to add or drop routes and eased the entry requirements for new airlines. The Amtrak Reorganization Act provided for streamlining the Amtrak route system in an effort to improve both its service and its financial performance. In addition, a bill was passed by Congress which, for the first time, imposed a user fee on the inland waterways.

Audits and Investigations

The Inspector General Act of 1978 required all of the Department's audit and criminal investigation units to be consolidated into an Office of Inspector General. The consolidation was completed on February 25, 1979.

During the year, 1,677 audit reports were issued, covering a wide range of Departmental programs and operations. Many grants and contracts were audited to determine allowable costs and to facilitate project completion and close out. Other audits identified opportunities to reduce costs and to improve the efficiency of Departmental programs and operations.

In addition to traditional audit and investigations responsibilities, the new office was asked to provide leadership in preventing and detecting fraud and abuse in Departmental programs and operations.

By the end of the year, 49 cases involving Departmental employees or contracts had been referred to the Justice Department for possible prosecution, and 115 cases were still under investigation.

A hotline was established in April 1979 to enable Departmental employees to provide the Inspector General with complaints and allegations of fraud or abuse in the Department. In addition, a vulnerability assessment program was instituted, to systematically review Departmental programs and operations to determine their susceptibility to fraud or abuse.

Data Systems

A Departmental task force developed a policy for the planning, acquisition, and use of automated data processing resources. To prepare for implementation of this policy, a Departmental training session in automated data processing planning was conducted. A working group was to meet in fiscal year 1980 to carry out the planning and implementation of the policy.

During the year a new operational computer center was established at Governors Island, New York. The center is expected to improve the Coast Guard's ability to carry out missions requiring a rapid response. It is also expected, eventually, to add the ability to communicate with other government organizations involved in marine issues and with command and control systems of the Department of Defense.

With Departmental telecommunication costs approaching $800 million annually, the Department began a study to address telecommunications policy, problems, and standards. The Federal Aviation Administration's national airspace data interchange network was being studied as a candidate for meeting Departmental requirements for data transmission.

Training And Development

During the year, two training sessions were conducted under a new management development program for women. This program was designed to enhance management opportunities for women within the Department. During fiscal year 1980 about 250 women were expected to participate in the program.

Minority Recruitment

The Department recruited 18 new management interns in 1979. They included four minorities, six nonminority females, and one physically handicapped individual. In addition, as the result of a special Departmental request, the Office of Management and Budget increased the Department's "other than full-time permanent" employment level by 100 positions. The positions were used to employ minorities and women in entry level programs.

Minority Business Enterprises

In fiscal year 1978 the Office of the Secretary awarded contracts totaling $2,328,911 to minority business enterprise firms. Fiscal year 1979 contract awards to minority firms totaled $3,525,911, a 51.4 percent increase over fiscal year 1978. Minority contracts accounted for 14.7 percent of the total contract dollars awarded in fiscal year 1979, a 5 percent increase over fiscal year 1978.

Civil Rights

Total civilian employment was reduced by nearly one thousand employees during the year. Minority civilian employment in the Department increased from 13.4 percent to 13.8 percent. During the same period, the employment of women rose from 17.4 percent to 17.5 percent.

A significant increase occurred in the number of minorities and women occupying professional and administrative positions. Minority representation in these positions rose from 10 percent to 11.2 percent, and that of women increased from 8.7 percent to 9.2 percent—reflecting to a large extent the Department's affirmative hiring efforts and the participation of minorities and women in predevelopmental, beginning professional, and upward mobility programs.

Both civilian and military women continued to assume greater leadership roles. A female Coast Guard officer was given command of a seagoing vessel—the first such assignment among the military services. The Federal Aviation Administration also stepped up its efforts to place women and minorities in line management positions throughout the organization, including their appointment to facility chief and assistant chief positions in towers, centers, and flight service stations around the country.

As a follow-up to the civil rights reorganization of 1978, Department of Transportation and Department of Labor officials worked to eliminate duplication of activities in connection with checking highway construction contractor employment practices. The Federal Highway Administration, the Urban Mass Transportation Administration, and the Federal Railroad Administration were also coordinating their activities involving compliance reviews of state departments of transportation.

United States Coast Guard

The United States Coast Guard is responsible for enforcing or assisting in the enforcement of federal laws on the high seas and waters subject to the jurisdiction of the U.S. These laws govern navigation, shipping, and other maritime operations and the related protection of life and property. The Coast Guard also provides maritime search and rescue facilities. Other responsibilities include: promoting the safety of merchant vessels; conducting oceanographic research; furnishing icebreaking services; and developing, installing, maintaining, and operating aids to maritime navigation. A further responsibility is to be ready to function as a specialized part of the U.S. Navy in time of war or national emergency.

The Coast Guard operates a fleet of 250 cutters, 167 aircraft, and more than 2,000 boats. It also maintains more than 48,000 navigation aids.

The missions of the Coast Guard are carried out by 38,565 military and 6,278 civilian personnel. They are supported by the 11,700 member Coast Guard Reserve and by 41,700 civilian volunteers in the Coast Guard Auxiliary.

International Affairs

The expanding maritime role of the Coast Guard has required greater participation in the Intergovernmental Maritime Consultative Organization (IMCO) and in international conferences and meetings. Agencies around the world have come to recognize the Coast Guard as a valuable source of assistance in maritime improvement. The assistance has included training foreign personnel at various Coast Guard schools, hosting visitors at Coast Guard units, and responding to requests for information.

Formal assistance and cooperation programs were initiated during the year with the Canadian Coast Guard and the Canadian Department of Defence, to permit a wider range of technology exchange programs. Agreements were reached which provided for establishing a Loran-C station in Vancouver, British Columbia, a joint traffic management system in the border waters of the Pacific Northwest, and a coordinated vessel traffic contingency plan for the Detroit and St. Claire Rivers.

Progress continued in negotiating agreements for the establishment of Omega navigation system monitoring sites around the world. By the end of the fiscal year, 55 bilateral agreements had been reached and information vital to the performance of the Omega system was being received.

Search and Rescue

The search and rescue program uses approximately one-third of the Coast Guard's operating funds and manpower resources. The objective of the program is to minimize loss of life, personal injury, and property damage due to vessel operations in the maritime regions of the United States.

Over the previous 10 years, calls for search and rescue services had shown a 6 percent annual growth. This trend was reversed in fiscal year 1979, with the Coast Guard responding to 75,615 calls for assistance; a decrease of 3 percent from fiscal year 1978. Much of this decrease was due to a decrease in boating activity, caused by fuel shortages and adverse economic conditions. Even so, in fiscal year 1979 the Coast Guard (with the aid of the Coast Guard Auxiliary) rescued more than 5,300 people from life threatening situations and assisted an additional 210,000 people who were in danger. The estimated value of the property saved exceeded $430 million.

The Coast Guard and the Department of State concluded work on an International Maritime Search and Rescue Convention. The convention was adopted, in April 1979, by 51 countries.

Ice Operations

The first of the Coast Guard's 140-foot icebreaking tugs completed an active season of icebreaking on the Great Lakes. The polar icebreakers successfully fulfilled their annual missions of scientific and logistic support in the polar regions. Of particular note was the success of the new icebreaker POLAR SEA. During her 1979 deployment in the western Arctic, POLAR SEA performed very well in heavy ice conditions.

Fisheries Law Enforcement

Coast Guard fishery conservation activities during the year included: boarding 1775 vessels (1127 domestic, 648 foreign); issuing 105 citations (24 domestic, 81 foreign); and initiating 95 civil penalty actions (53 domestic, 42 foreign). Twelve foreign vessels were seized, resulting in the payment of $1.1 million in monetary penalties. Foreign fishing was the primary concern in the fishery conservation zone waters off Alaska and was a major concern in all areas.

In addition to its fisheries management responsibilities, the Coast Guard continued to enforce various statutes regarding marine mammals, endangered species, and halibut. Conflict between fishing groups, domestic or foreign, continued to require considerable Coast Guard attention, including on-scene intercessions and investigations, fixed gear reporting, and marking system management.

A second joint National Marine Fisheries Service and Coast Guard study of future enforcement needs was completed. It predicted a growing need for medium endurance cutters and medium range aircraft to patrol domestic offshore salmon, lobster, surf clam, anchovy, and shrimp fisheries. The growth of marine sanctuaries, oil exploration, and seabed mining in fishery areas also was expected to increase the need for medium endurance and medium range equipment. Responsibilities in the western Pacific, the Bering Sea, and the western extremities of Alaska were expected to increase the need for ships and aircraft of extended endurance capability.

A contract was awarded in September 1979 to the Santa Fe Corporation for a study which was to provide a second generation fisheries law enforcement planning model. The model was to be used by the Coast Guard to determine the best resource level and mix for both near term and long term enforcement needs. The model was also to be used to forecast where the resources should be placed in order to reach planned efficiency levels.

Drug Interdiction

The Coast Guard completed its third year of intensified drug interdiction and deterrence operations. The number of vessels seized for smuggling drugs decreased, compared to fiscal year 1978, but the average weight of contraband for each vessel seized increased. The $1.8 billion estimated value of the confiscated contraband exceeded the estimated value of the contraband confiscated during each of the previous years.

The largest quantity of hashish ever seized by United States law enforcement agencies resulted from a Coast Guard boarding March 17, 1979. The Liberian registered motor vessel OLAUG was seized by the Cutter POINT FRANCIS in Sandy Hook Bay, New Jersey, after an extensive search of the vessel revealed 41,580 pounds of hashish, with an estimated value of $126 million.

During the year, more than 90 vessels were seized by the Coast Guard for smuggling drugs; and Coast Guard units assisted other agencies in the seizure of 23 additional vessels. As a result of all these seizures, approximately 3.1 million pounds of marijuana, 43 thousand pounds of hashish, 500,000 doses of Quaaludes, and small quantities of cocaine and heroin were interdicted.

Overall, Coast Guard units increased their law enforcement efforts by approximately 20 percent over 1978 levels. Eighteen major cutter deployments were made to the Florida-Caribbean region by cutters from the 1st, 3rd, and 5th Coast Guard Districts. Five of these deployments were made by cutters conducting annual training for Coast Guard Academy cadets.

Drug traffic patterns were apparently influenced by the vessel seizures made in 1978 in the Florida area. Intelligence sources indicated that more smuggling was being directed at the western Gulf of Mexico, the North Atlantic Coast, and the Pacific Coast. Additionally, an increase in air traffic in marijuana was reported. That increase may account for part of the decrease in the number of vessel seizures in 1979.

A Coast Guard organized conference, with representatives from Mexico, Colombia, Venezuela, Honduras, Ecuador, Haiti, Dominican Republic, Panama, the Bahamas, and the U.S., resulted in the establishment of the inter-American maritime intelligence network. The purpose of the network was to share drug related intelligence and to aid in suppressing waterborne smuggling into the U.S.

Aids to Navigation

A project to improve the positioning of aids to navigation developed new procedures using small computers and hand held calculators to provide on-scene position determination. As a result, initial work was begun on new positioning standards. In related research, tests of mooring materials indicated a great potential for nylon as a replacement for chain.

Renovation of the aging buoy tender fleet continued, with two tenders receiving major alterations. Six new high speed servicing craft were being built for use by aids to navigation servicing teams. A plan was adopted to provide an additional river buoy tender on the western rivers, to service the Red River Waterway which was to open to marine traffic in 1983.

The lighthouse automation and modernization project continued with the automation of seven lighthouses, bringing the project total to 83. Only 58 of 388 lighthouses were still manned. Benefits derived from the project included personnel reductions, decreased logistics requirements, and the elimination of undesirable isolated duty assignments.

The Columbia River lightship was decommissioned, following its replacement by a large navigational buoy, ending 87 years of manned lightship service on the West Coast.

A contract was awarded on August 24, 1979, for the conversion of six Florida Keys reef lights to solar power with some of the funds coming from the Department of Energy. Original Department of Energy funding of $154,000 was amended to provide an additional $990,000. About 1,400 12-volt, battery operated, short range aids to navigation were to be converted to solar photovoltaic power. The conversion was to begin in late fiscal year 1980 or early fiscal year 1981.

Active Coast Guard radionavigation systems included 36 Loran-C, 2 Loran-A/C, 20 Loran-A, and 4 Omega stations, plus 196 radiobeacons. The phasing out of Loran-A continued, with the disestablishment of four U.S. operated Loran-A stations and termination of Loran-A operations at three Loran-A/C stations in the Hawaiian and Aleutian Islands.

Implementation of Loran-C service throughout the Coastal Confluence Zone continued, with completion of the Northeast U.S. and Southeast U.S. Loran-C chains and the phasing out of the East Coast chain. Construction continued on schedule at Baudette, Minnesota, which was to be the last new U.S. station to be constructed under the Loran-C national implementation plan.

Planning for the assumption by the Coast Guard of former Navy responsibilities for the Omega system was completed. Actual transfer of the system was to occur in October 1980. Validation of the system for the North Atlantic and Northern Pacific regions began.

New radiobeacons were installed at Portsmouth Harbor, New Hampshire, and Fort Bragg, California. Radiobeacon service was discontinued at Cape Sarichef, Alaska, and French Frigate Shoals, Hawaii. Progress was being made on a contract, awarded in fiscal year 1978, to produce 226 new radiobeacon transmitters. The first of the new transmitters was scheduled for delivery in January 1980.

Commercial Vessel Safety

The Coast Guard expanded its activities on the outer continental shelf in an effort to improve the protection of the marine environment during the exploration, development, and production of continental shelf oil and gas resources and to protect the health and safety of the people operating the equipment involved. Coast Guard marine inspectors were applying new regulations to drilling vessels and diving operations. In addition, all outer continental shelf facilities were being inspected and new procedures implemented to carry out the mandates of the Outer Continental Shelf Lands Act Amendments of 1978.

In response to increased Far East commercial vessel construction activity, as well as an increase in the number of U.S. flag vessels operating exclusively in the Far East, the Coast Guard established a vessel inspection office in Kobe, Japan. During the year, there were ten U.S. vessels under construction in Japan and two in Korea.

Recreational Boating Safety

The Coast Guard's boating safety program continued its efforts to reduce fatalities, injuries, and property damage among the fourteen and one-half million boats and sixty million people who go boating annually. A grant program continued to provide funds to state boating authorities to encourage greater boating safety activity at the state and local level. In fiscal year 1979, all but three eligible jurisdictions (Alaska, American Samoa, and Northern Marianas Islands) participated in the program. Grants awarded during the year totaled $5.2 million.

During the year, the Coast Guard monitored 208 recall campaigns undertaken by various manufacturers to correct potential hazards or to modify boats which failed to comply with applicable federal safety standards. At the close of the year, 109 campaigns remained open, potentially affecting 48,066 units. Forty-seven boats were tested by an independent testing facility under contract to the Coast Guard, and preliminary test results indicated that 21 of the boats failed to meet one or more of the applicable standards.

Boating safety rulemaking during fiscal year 1979 was aimed at improving boat operator and manufacturer requirements. Establishing a performance standard for flotation material enabled the manufacturers to more easily comply with the regulations. Amendments were also made to the accident reporting regulations to clarify various reporting criteria. Work continued on various new regulations, including visual distress signals, ventilation requirements, first purchaser record keeping requirements for marine dealers, and protection from outboard motors starting while in gear.

The boating safety program was greatly aided by the support of the Coast Guard Auxiliary. During the year, Auxiliary members conducted safety courses for more than 500,000 people and made courtesy examinations of over 300,000 boats. The Auxiliary was credited with saving 1,156 lives, assisting over 53,000 people, and assisting or saving property valued at about $220 million.

Marine Environmental Protection

Fifty-three pollution response vehicles (step vans or 4 wheel drive units) were procured to provide the Coast Guard with improved emergency capability to contain oil discharges. The vehicles were to be used as command posts and to carry equipment to contain or limit the damage of a pollution incident until commercial cleanup contractors could be obtained.

Action was begun to provide field units with personal protective equipment, such as self-contained breathing apparatus, emergency escape breathing apparatus, and chemical detection devices. The plan was to see that all units involved in marine environmental protection, port safety and security, and commercial vessel safety were adequately equipped with protective equipment.

The chemical hazards response information system was expanded to include information on 900 chemicals. The expansion improved the Coast Guard's ability to safely and effectively respond to chemical incidents. The hazardous chemical training course curriculum was also modified to incorporate chemical spill response exercises and hands-on training with personal protective equipment.

In order to improve both government and industry response to emergencies involving hazardous chemicals and other materials, liaison between the Coast Guard's national response center and the Chemical Manufacturers Association's chemical transportation emergency center was increased. Both centers were being linked by telephone hotlines and a high speed automated data processing system to improve the nature, timeliness, and quality of advice provided to on-scene emergency response personnel. The new hazardous materials emergency response system was expected to be operational by January 1980.

Implementation of the Offshore Oil Pollution Liability Fund began on July 25, 1979, as provided by the Supplemental Appropriation Act of 1979. The purpose of the fund was to provide financial compensation to those harmed economically or physically by outer continental shelf oil pollution as well as to deter such pollution. Difficulties in statutory language led to underwriter refusal to establish an insurance market to provide coverage to those activities unable to self-insure. This affected the availability of a certificate of financial responsibility for some inadequately financed companies. The Coast Guard decided not to terminate the operations of these companies pending resolution of the problem through legislative amendment.

Port Safety and Security

The Coast Guard's waterfront regulations were amended on January 22, 1979, to eliminate errors, to update cross references, and to provide for new authority granted under the Ports and Waterways Safety Act.

In April 1979, the Coast Guard began a ships' routing and port access study, as required by the Port and Tanker Safety Act of 1978. The study, which was scheduled for completion in December 1981, was designed to develop proposals which would improve ship routing and port access rules.

Navigation requirements were amended to require long and short range radar capability and true north determination as well as electronic navigation equipment on tankers of 10,000 gross tons or more, as required by the Port and Tanker Safety Act of 1978. Work began in 1979 on the specification for the electronic relative motion analyzers which were to be installed by July 1, 1982.

The Coast Guard continued its monitoring of the design and construction of the Louisiana offshore deepwater port. This monitoring process was to continue beyond the first oil movement, which was scheduled for February 1981. A review of operational procedures was expected to begin in February 1980.

On August 15, 1979, a license was conditionally offered to the Texas Deepwater Port Authority to construct a deepwater port off Freeport, Texas. However, the license was not to be effective unless proof of financial capacity was demonstrated by May 15, 1980.

Bridges

During fiscal year 1979, 242 bridge permits and 23 special drawbridge regulations were issued. Pursuant to the Truman-Hobbs Act, Orders to Alter were issued on the Peoria and Pekin Union Railway Company bridge across the Illinois River at Peoria, Illinois, and on the Alabama State Docks Department Terminal Railroad bridge across Three Mile Creek at Mobile, Alabama. Construction began on the Illinois Central Gulf Railroad bridge across the Illinois River at Pearl, Illinois. Construction was completed on the Seaboard Coast Line Railroad Company bridge across the Cooper River near Charleston, South Carolina.

Aircraft Procurement And Improvement

A contract was awarded on June 14, 1979 to Aerospatiale Helicopter Corporation of Grand Prairie, Texas, for ninety SA 365 N aircraft (designated HH-65A by the Coast Guard). Despite Bell Helicopter's contract award protest action, work on the contract continued and first delivery was scheduled for January 1981.

An Omega navigation system was installed in the HH-3F helicopters based at Coast Guard Air Station Borinquen, Puerto Rico, to increase the operational reliability of flights conducted in the Caribbean, where Loran-C coverage is poor.

A program was started to improve the navigational capability of all Coast Guard helicopters by installing Loran-C navigation systems. The program included updating the existing navigational computers in the HH-3F helicopters as well as providing a new capability for the HH-52A helicopters.

Shore Construction

During fiscal year 1979, a total of $17.4 million was obligated for shore facility construction. In addition, land was purchased, at a cost of $1.7 million, for the Mobile Aviation Training Center in Alabama. Survey and design funds in the amount of $1.5 million, supporting future year projects, were also obligated. Several major shore construction projects, with a total cost of $18.4 million, were completed during the year.

Cutter Construction, Design, And Maintenance

Successful winter operations by the first 140-foot icebreaking tug, KATMAI BAY, proved that it met its icebreaking performance design goals. Three more tugs, the BRISTOL BAY, MOBILE BAY, and BISCAYNE BAY, were accepted and commissioned during 1979. Two additional tugs were being constructed at Tacoma Boat Company, with delivery scheduled late in fiscal year 1980.

Modifications required for the command and control and weapon systems delayed delivery of the first four 270-foot medium endurance cutters by about 8 months. The first ship was rescheduled for delivery in August 1981. The solicitation of bids for nine more 270-foot cutters was to occur during fiscal year 1980.

The 400-foot icebreaker POLAR STAR experienced propeller problems during her 1979 deployment. Corrective action had been completed by the end of the fiscal year, but propeller and vibration analysis continued. A ten percent fuel savings was anticipated from application of a low friction hull coating to the POLAR class icebreakers.

A continuing program of machinery modernization and living space renovation was being pursued in order to extend the service life of older cutters. Renovation of the thirteenth 180-foot buoy tender was completed during fiscal year 1979, and equipment procurement for renovation of the MACKINAW was begun.

By the end of the fiscal year, installation of sewage abatement equipment had been completed on 85 percent of the Coast Guard's cutters. All cutters 65 feet and longer were to have vacuum flush systems installed by 1980, except for the POLAR class icebreakers and the 327-foot and 82-foot cutters, which were to have holding tanks.

The program to improve firefighting capability aboard cutters continued. Systems using dry chemicals, Halon, and foam were being installed, with completion expected in fiscal year 1980. Bids were obtained for purchasing Halon systems for small boats. Installation was to start early in 1980 and be finished by the end of the fiscal year.

Boat Design And Construction

Fifteen 41-foot utility boats were constructed at the Coast Guard Yard, Curtis Bay, Maryland, during fiscal year 1979. This brought the total number of 41-foot boats delivered to 184. Construction was scheduled to continue at the rate of 15 boats per year through fiscal year 1981.

As a result of contract default, the 55-foot aids to navigation boat contract had to be rebid. A new contract was awarded on May 24, 1979, with delivery scheduled during fiscal year 1980.

Military Readiness

Coast Guard forces represent a significant percent of the total forces dedicated to the task of sea control and to facilitation of waterborne transportation in national defense. During the year, the Coast Guard continued its participation in the Defense Department's command post exercises and its worldwide military command and control system. In addition, five Coast Guard high endurance cutters engaged in joint operations with other naval forces during fleet exercises, and thirty-eight Coast Guard cutter crews underwent refresher training at Navy training facilities.

Oil Spills

In order to respond to the Campeche (Gulf of Mexico) oil spill, emergency repairs and modifications were made to

major pollution response hardware during July, and both the open water oil recovery systems and all the skimming barriers in the Coast Guard inventory were made fully operational. The skimming barriers were used for the first time in a major spill on August 2, 1979. They performed well, recovering 5,000 barrels of oil and water per day in 12 foot seas and 40 to 50 knot winds. However, experience gained during this operation indicated the need for a minor redesigning of the pumps.

Vessel Traffic Services

The New York vessel traffic service was scheduled to be completed in July 1978, but was delayed because of local opposition to a proposed microwave relay site. After a new site was chosen, completion was rescheduled for September 1979. However, the system was not in operation by that date because of equipment problems. At the end of the year, testing and correction of the problems continued, but no new date had been set for completion and commissioning.

Expansion of the New Orleans vessel traffic service was delayed by questions raised by local maritime interest groups. Work on radar coverage was stopped until a comprehensive study of vessel traffic on the lower Mississippi River is completed. However, the closed circuit TV portion of the New Orleans project was proceeding, with a contract to be awarded late in fiscal year 1980.

Contracts were awarded to expand the Puget Sound vessel traffic service's radar surveillance to cover the Straits of Juan de Fuca and Rosario Strait. The project was scheduled for completion in December 1980.

Research And Development

Significant efforts were made during the year to improve the Coast Guard's capability in oil and hazardous chemical detection, response, and enforcement. One major activity was the development of an advanced airborne oil surveillance system for deployment on the new HU-25A medium range surveillance aircraft. The system was expected to provide accurate and timely oil pollution detection capabilities. Other research and development activities included continued development of ice and cold weather response techniques, offshore testing of open ocean response systems, establishment of a central oil identification laboratory for forensic purposes, testing of response equipment (including systems for aerial application of dispersants), and development of plugging devices to reduce the discharge of pollutants from damaged vessels.

Efforts continued in the development of improved navigation and traffic management systems. One major activity was a program to evaluate the possible use of Loran-C as an all weather precision harbor and harbor entrance navigation system. Along with the Loran-C study, a study was begun to determine the potential suitability of the NAVSTAR global positioning satellite system for harbor and coastal navigation. In addition, work continued on the development of a second generation vessel traffic service system; a prototype automatic radar tracking system was developed; and a traffic management computer model was developed for use in evaluating vessel traffic service system requirements.

A contract was awarded to develop a prototype infrared day and night search system for evaluation on Coast Guard helicopters. Also, a prototype wide area airborne illumination system was under development. Both systems would greatly improve helicopter operations. A program to adapt advancing energy technology to Coast Guard missions was in progress. Efforts in this area included development of fuel and water emulsions for use in marine engines and boilers, a project to develop non-conventional power sources for operating major aids to navigation, and continuing work with solar photovoltaic systems to power aids to navigation.

In marine safety, technical studies were conducted in an effort to minimize vessel and boating casualties. Studies to determine the behavioral characteristics of sulfuric acid and liquified natural gas as marine cargoes were conducted; a study of human and physical factors affecting marine collisions was completed; a study of the dangers posed to marine personnel by releases of hazardous chemicals was begun; a towboat simulator was developed to investigate towboat handling, safe bridge configuration, and waterway and channel design; the prototype of a marine safety information system was completed and the causes of capsizing and swamping of recreational boats were examined.

Coast Guard Reserve

During 1979, the performance of the Coast Guard Reserve continued to improve in all three of its primary functions: readiness, training, and administration. Mobilization readiness exercises were conducted and existing mobilization plans were updated to match those of the Department of Defense. A standard system for training course development was adopted, and the afloat training program was modified to assure that reservists received all the training required for both wartime and peacetime assignments. The Coast Guard Reserve officer promotion system was the subject of a

comprehensive study and improvements were proposed. The 1979 recruiting program overcame a six-hundred person deficit to end the fiscal year at the authorized strength of 11,700. The Coast Guard Reserve continued to use augmentation training as a tool for providing mobilization training while supporting the peacetime missions of the service. In the Great Lakes, reservists successfully completed their seventh year of operating three seasonal search and rescue stations. During the year a total of 95 reservists were called to emergency duty.

Civil Rights

Military. During fiscal year 1979, the first military civil rights manual was published, establishing policy, procedures, and guidance for the implementation of the military civil rights program. In addition, the awareness training program for military personnel and civilian supervisors was revised; and a human relations training program for members of the Coast Guard Reserve was established.

The number of pending military discrimination complaints declined slightly. At the beginning of the year, there were 10 active cases. At the end of the year there were 7 active cases. No major discrimination problems were encountered during the year.

Civilian. Four evaluations of field equal employment opportunity programs were conducted during the year. The evaluations emphasized organization and management of the program, implementation of special programs and the discrimination complaint system, the impact of recruiting and promotion goals, and the level of supervisory and employee awareness. Preliminary work was completed on a civilian equal employment opportunity manual. The new manual was expected to update existing regulations, as well as to incorporate provisions for the protection of the rights of officials who are alleged to have discriminated. The total number of civilian complaints remained stable, with 22 complaints being investigated at the end of the year.

Fifty-six Coast Guard employees below the GS-9 level were promoted or reassigned as a result of the upward mobility program.

Health Services

The health services support program made significant strides toward the goal of self sufficiency in the delivery of health care to Coast Guard personnel. The fiscal year 1979 budget included funds to provide inpatient hospitalization of active duty members as close to their duty stations as possible. Agreements were signed with the Veterans Administration and the Alaskan Native Health Service for cooperative Coast Guard use of their health care facilities. Removal of restrictions on the recruitment and assignment of women in the Coast Guard resulted in additional training in the delivery of health care to women. Expansion of the dental program resulted in better dental care to all beneficiaries.

The creation of a Coast Guard emergency medical technician school at Petaluma, California, made a marked improvement in the Coast Guard's emergency medical services to the public. The Coast Guard was the first of the armed forces to have a centralized school for the training of emergency medical technicians.

Recruiting

During fiscal year 1979, the Coast Guard enlisted 7,558 people, which was only 96 percent of its goal, but the highest number enlisted in the last 27 years. The minority goal was 18 percent of the total force enlisted. Actual minority enlistments totaled 1,252, or 16.6 percent, the highest number ever brought aboard in one year. Female enlistments totaled 688, also the highest total yet attained.

Increased Opportunities For Women

Coast Guard women continued to be assigned to all types of duty, including afloat and isolated duty. They served on 378-foot high endurance cutters, on 95-foot patrol boats (as commanding officers), and at Loran stations. Women were being offered nontraditional ratings (technical), as well as traditional administrative and clerical ratings. Women were made eligible for assignment to any Coast Guard unit able to meet satisfactory standards of privacy and personal hygiene. Distinctive women's uniforms were developed and were being refined.

Federal Aviation Administration

Ensuring aviation safety is the primary mission of the Federal Aviation Administration (FAA). How well FAA carries out that mission is reflected in the annual safety statistics compiled by the National Transportation Safety Board.

During calendar year 1978, most categories of flying showed an improvement in safety. U.S. certificated route air carriers in scheduled *domestic* passenger service had a passenger fatality rate of 0.007 per 100 million passenger miles, down from 0.038 in 1977. All told, the scheduled domestic carriers had 16 fatalities and 4 fatal accidents, compared to an average of 100.8 fatalities, 2.4 fatal accidents, and a passenger fatality rate of 0.067 over the preceding five-year period, 1973–77. U.S. certificated route air carriers in scheduled *international* passenger service recorded their second consecutive fatality free year. U.S. supplemental air carriers engaged in civil and military passenger operations recorded their eighth consecutive fatality free year.

Air taxi operators (carriers who provide service on demand, rather than on a scheduled basis) were alone among the commercial carriers in failing to improve their safety record. They experienced 248 accidents, 54 fatal accidents, and 165 fatalities. Their fatal accident rate per 100,000 aircraft hours flown rose to 1.56 (a 42% increase compared to 1974), and their total accident rate per 100,000 aircraft hours flown rose to 6.06 (a 15% increase compared to 1974).

General aviation as a whole fared no better, disrupting a trend of six consecutive years of improving accident and fatal accident rates. For the year, general aviation had 4,609 accidents (the highest since 1971), 795 fatal accidents (the highest since 1948), and 1,690 fatalities (a record high), for an accident rate per 100,000 aircraft hours flown of 12.6 (the highest since 1975) and a fatal accident rate of 2.17 per 100,000 aircraft hours flown (the highest since 1974). One general aviation accident, a collision between a light plane and an intrastate carrier near San Diego, killed 144 people.

The DC-10 Grounding. In the latter part of fiscal year 1979, the attention of FAA was focused on the May 25, 1979, crash of an American Airlines DC-10 at Chicago's O'Hare International Airport, which killed 273 people in the worst air disaster in U.S. aviation history.

The left engine and pylon had separated from the airliner just before the fatal crash, so FAA ordered a comprehensive inspection of the pylon assemblies of the entire U.S. DC-10 fleet. During the inspection, cracks were found in the pylons of a number of DC-10's. FAA tentatively concluded that improper maintenance procedures had caused the cracks. On June 5, however, the discovery of cracks on two aircraft that had previously been inspected and found crack-free cast doubt on the theory that the cracks were maintenance induced and raised fears that other aircraft in the fleet might also develop cracks.

On June 6, FAA suspended the DC-10's type certificate, thus grounding all 138 DC-10's under U.S. registry. Foreign carriers grounded their DC-10's voluntarily. It was the first time an entire fleet of air carrier transports had been grounded by the federal government since the late 1940's. The grounding remained in force for 37 days.

During those 37 days, three separate teams sought answers to questions raised by the accident and the discovery of cracks. Their investigations revealed that: (1) one set of cracks had been caused by a faulty maintenance procedure; (2) another set was due to poor quality control in manufacturing; and (3) the DC-10 pylon was basically sound. On July 13, FAA permitted the aircraft to return to service; at the same time, however, it imposed a rigorous inspection schedule on DC-10 operators. At the end of the fiscal year, FAA was considering ordering structural modifications that would make the pylon less susceptible to maintenance induced damage.

Flight Operations. In an effort to improve the level of safety in air taxi and commuter airline operations, FAA revised Part 135 of the Federal Aviation Regulations. The new rules, which became effective on December 1, 1978, brought pilot qualifications, training programs, and other operating requirements for this class of operators more closely in line with the standards required for scheduled air carriers. FAA also revised its

inspection policies to provide increased surveillance of commuter airlines.

Civil Aviation Security. Aircraft hijacking and aviation sabotage persisted. During fiscal year 1979, hijackers commandeered 12 air carrier and one general aviation aircraft, compared to seven air carrier and four general aviation aircraft during the previous year. In all, 69 significant criminal acts were committed in civil aviation, resulting in 63 deaths and 66 injuries. Terrorist groups carried out 18 of the acts. Twenty-seven of the 69 incidents occurred in the United States.

FAA took a step toward further tightening of aviation security by preparing a notice of proposed rulemaking that would extend security measures to air taxi and commercial operators engaged in scheduled or public charter operations and to airports serving such operations. FAA felt this proposal was necessary because of Civil Aeronautics Board rulings which allowed commuters to use aircraft with a capacity, performance, and range that made them attractive hijacking targets. Moreover, FAA was obligated, under the Airline Deregulation Act, to require commuter airlines to offer, wherever feasible, a level of safety equivalent to that provided by certificated route air carriers.

As part of its aviation security efforts, FAA also revised Part 107 of the Federal Aviation Regulations. The revision updated and clarified airport security requirements, including provisions for broadened protection of persons and property in air transportation against acts of criminal violence and aircraft piracy. It also clarified the requirements for law enforcement support and the use of law enforcement officers and prohibited the unauthorized carriage of firearms, explosives, or incendiary devices by persons in or entering secure areas.

Other Safety Developements. In other activities relating to aviation safety, FAA:

- Started using a computerized aviation safety analysis system intended to strengthen the engineering analysis of safety information. (The Transportation Systems Center, which was also involved in this program, was to assess the needs of the aviation community for information relating to the manufacture, operation, and maintenance of aircraft and the rating and certification of airmen; FAA would use the data generated by the system to support its regulatory activity.)
- Prepared to respond to the recommendations of the Special Aviation Fire and Explosion Reduction Advisory Committee concerning air carrier cabin interior materials and post-crash fire reduction. (FAA's response was expected to include both regulatory action and research and development programs.)
- Received from the American Medical Association a final report on neurological and neurosurgical conditions associated with aviation safety. (The report was proving of great value in determining the medical qualifications of civil aviators.)
- Adopted a new method for evaluating airport pavements. (The new method was expected to provide better performing pavements and to lead to design procedures that were easier to use; in a related development, FAA undertook a national runway friction survey to assess the overall condition of the nation's runways and to find ways to improve runway surface conditions.)

Airways And Airports

Airway Modernization. At the end of fiscal year 1979, FAA was acquiring a new direct access radar channel system for all air route traffic control centers equipped with 9020 computers. The new system was to operate in a standby mode and be switched into operation immediately upon any malfunction or shutdown of the primary en route computer system.

FAA was also modernizing its long-range radar in an effort to improve its radar coverage. The new ARSR-3 radars were designed to provide improved target and weather detection. A total of 22 of the ARSR-3s were to be deployed. During fiscal year 1979, two of the new systems went into operation, and an additional 18 were to be in operation by the end of 1980.

FAA continued to develop two new automated programs—terminal conflict alert, and the en route minimum safe altitude warning system. During 1979, conflict alert was operational at 59 terminals, and FAA expected to install the system at three more terminals in 1980. The minimum safe altitude warning system was going through nonoperational testing at the Albuquerque air route traffic control center. If the test results proved positive, the system was to be implemented nationally, beginning late in 1980. In another modernization activity, FAA awarded contracts totaling $12.8 million for the design of computer systems for automating its flight service stations.

Airspace Management. On December 27, 1978, FAA announced a plan to enhance flight safety in the national airspace system. The plan included three areas of emphasis—en route flight operations, airport area operations, and collision avoidance.

On January 4, 1979, FAA published a notice of proposed rulemaking dealing primarily with the en route flight operations portion of the plan. The notice proposed lowering the floor of the area of positive control; it also proposed a new controlled visual flight concept

within the lowered positive control area, and proposed establishing 44 new terminal control areas. FAA withdrew the proposal, however, because of unfavorable public comment. At the end of the fiscal year, FAA still intended to establish 37 new terminal control areas and 80 new terminal radar service areas and to provide alphanumeric displays at all terminal control area airports.

Airports. Obligations under the planning grant and airport development aid programs hit new single-year highs. During the year, FAA approved 241 planning grants totaling $15.3 million. It also obligated $636 million for new airport development grants and for increases to grants issued in prior years. Approximately 10 percent of the development grants went for construction of satellite airports to relieve congestion at major air carrier airports.

In a related development, FAA completed updating its 10-year national airport system plan. The revised plan, which covered the period 1980–89, identified airport development needs totaling about $12.7 billion.

Environment And Energy

FAA actions in the areas of environmental protection and energy conservation during fiscal 1979 included:

- Proposing noise standards for civil helicopters, including new designs and newly produced models of older designs;
- Changing FAA procedures for environmental assessments, in response to the revised procedures of the Council on Environmental Quality; and
- Conducting special studies on the effects of fuel price increases and fuel shortages on aviation growth.

International Aviation Activities

One of the more important international activities engaged in by FAA is providing technical assistance to foreign countries to improve their air transportation systems. Such assistance, which is usually done on a reimbursable basis, promotes worldwide aviation safety, supports U.S. economic and national security goals, and contributes to U.S. leadership in world aviation.

During fiscal year 1978, FAA had civil aviation assistance groups in Venezuela, Oman, South Korea, and Spain. In addition, the agency undertook 53 short-term technical assistance missions in 19 countries. It also trained 460 nationals from 71 countries.

FAA also maintains close liaison with foreign aviation officials and with representatives of the international aviation community to keep them informed of or to seek their views on proposed FAA actions. These contacts are particularly vital in instances where FAA actions affect foreign operators serving U.S. points or using U.S. manufactured equipment.

Administration And Personnel

Organizational Developments. FAA continued to reorganize its Washington headquarters. The major steps taken during the year included:

- Establishing a position of Associate Administrator for Aviation Standards to oversee the Flight Standards Service, the Office of Aviation Safety, and the Civil Aviation Security Service. Subsequently, the Flight Standards Service was abolished and its functions were reassigned to the Office of Aviation Safety and to two new offices—the Office of Airworthiness and the Office of Flight Operations. The basic purpose of this reorganization was to separate the personnel and hardware elements of the aviation standards.
- Abolishing the position of Associate Administrator for Policy Development and Review and establishing in its place an Associate Administrator for Policy and International Aviation Affairs, with responsibilities in planning, policy, international aviation, and environmental and energy matters. In August 1979, the overseas activities relating to Europe, Africa, and the Middle East were placed under the direction of this associate administrator.
- Establishing a position of Associate Administrator for Airports to oversee the Office of Airport Planning and Programming, the Office of Airport Standards, and Metropolitan Washington Airports. This change consolidated all FAA airport functions under the direction of one official.

Personnel. Among the more important personnel developments during the year, FAA—

- Evaluated the air traffic controllers second career program, which Congress had not funded in fiscal 1979, and concluded that it was ineffective and should be discontinued.
- Introduced a new training course which all new FAA supervisors were required to take during their supervisory probation period.
- Implemented a new uniform payroll system at 4 of its 10 accounting offices. By year's end, the new system covered about 30,000 FAA employees and 5,700 civilian employees of the U.S. Coast Guard. When fully implemented, in fiscal year 1980, the new system was to replace 11 existing payroll systems, cutting costs and increasing accuracy, flexibility, and uniformity.

- Dealt throughout the year with various petitions and responses growing out of the effort of the Professional Airways Systems Specialists (PASS) to represent FAA's electronics technicians, who were being represented by the Federal Aviation Science and Technology Association (FASTA). The final outcome of this effort would not be known until the Federal Labor Relations Authority directed an election among the electronics technicians.

Civil Rights

FAA continued to make advances in the area of civil rights and equal employment opportunity. During the year, the agency—

- Conducted 440 reviews of airport sponsors and found 32 sponsors not in compliance with the Civil Rights Act of 1964 and Part 21, Title 49, of the Code of Federal Regulations. All but three of the sponsors subsequently complied.
- Awarded $40.2 million in contracts to minority-owned firms.

The number of full-time FAA employees dropped from 56,726 at the end of fiscal year 1978 to 54,444 at the end of fiscal year 1979. However, the number of female employees increased slightly, from 7,546 (13.30%) to 7,564 (13.52%). The number of minority employees also increased slightly, from 5,982 (10.79%) to 6,044 (10.87%).

Federal Highway Administration

The federal-aid highway program, which is administered by the Federal Highway Administration (FHWA), provides funds to the states to assist in the construction, reconstruction, and management of the nation's street and highway system. The funds are furnished through a number of categorical programs designed to meet specific objectives, all of which contribute to the improvement of transportation services. This chapter describes some of the major activities carried out by FHWA during fiscal year 1979 in its effort to reach those objectives.

Federal-Aid Delivery

Timely implementation of the 1978 Surface Transportation Assistance Act, which became law on November 6, 1978, about five weeks after the beginning of fiscal year 1979, was an essential element in the success of the fiscal year 1979 highway program. As a result of the Act's new authorizations and provisions, the states achieved the highest level of obligations ever in the federal-aid highway program—$8.5 billion for those programs subject to the congressional limitation on obligations, and $9.3 billion overall.

The act included provisions to expedite completion of the interstate system. Particularly helpful was the establishment of the interstate discretionary fund, which gives the Secretary of Transportation the authority to reallocate funds not being used expeditiously (within 2 years) in one state to other states with ready-to-go projects. Twenty states took advantage of this provision to obligate approximately $1.4 billion. This was in addition to the almost $2.9 billion in regular interstate construction funds that were obligated.

As of September 30, 1979, 39,642 miles of the interstate system were open, including 507 miles put into service during the fiscal year. Three hundred and twenty-nine miles of essential intercity gaps were opened to traffic and another 235 miles were placed under construction contract. Only 1,880 miles of the interstate system remained to be opened.

Increasing highway construction and maintenance costs, plus emphasis on completion of the interstate system, were contributing to a financial drain on state and local transportation revenues. This was leading to a gradual, but obvious, deterioration of all highways. Congress recognized this in the 1978 Surface Transportation Assistance Act, when it continued the interstate resurfacing, restoration, and rehabilitation program, and at the same time required that a portion of each state's federal-aid primary and secondary funds be used for resurfacing, restoration, and rehabilitation work. These sections of the Act continued a shift in emphasis from new highway construction to preservation of the existing highway systems.

One hundred and seventy-seven million dollars of interstate resurfacing, restoration, and rehabilitation funds was obligated in fiscal year 1979. As a result, 930 miles of already opened interstate highways were to provide an improved service level to motorists. More than $230 million was obligated for resurfacing, restoration, and rehabilitation work on the primary and secondary systems. This affected about 2,600 miles of primary and secondary roads.

Impressive progress was made in another major program area that is related to the preservation of highways and to safety—the bridge replacement and rehabilitation program. Obligations under this program during fiscal year 1979 reached a record level of nearly $580 million (about $400 million more than was obligated in fiscal year 1978) and resulted in the initiation of more than 1,700 projects.

New attention was given to bridge problems on the 3 million miles of roads and streets that are not on the federal-aid system, by including them in the bridge program. Of the estimated 362,000 off-system bridges, about 46 percent were inventoried and pertinent information concerning them was placed in the National Bridge Inventory data base. During fiscal year 1979, over $60 million was obligated for more than 400 off-system bridge projects.

Safety

The highway safety activities of the federal-aid highway program include special categories of assistance for safety construction and for safety problem identification and solution. Over 1,100 projects to eliminate high

hazard locations and remove roadside obstacles were started or completed during fiscal year 1979. Improved pavement marking was completed on 100,000 miles of roadway. Additionally, some 3,100 projects were underway or completed to provide additional safety at rail-highway crossings. About 30 percent of the crossings judged deficient in passive warning devices were improved, and 15 percent of the crossings judged deficient in active warning devices were upgraded.

In order to increase highway safety from an operational perspective, FHWA increased the number of commercial motor vehicle inspections and compliance surveys it conducted. Inspections of motor carriers totaled 26,127 in fiscal year 1979, as compared to 25,695 in fiscal year 1978. A total of 10,779 vehicles and 1,980 drivers were taken out of service, compared to 9,978 vehicles and 597 drivers in fiscal year 1978. Hazardous materials compliance surveys increased from 2,700 in fiscal year 1978 to 3,600 in fiscal year 1979. In addition, 858 safety education meetings were conducted with various groups. Also during the year, a demonstration program was launched which was expected to result in expanded truck safety and weight enforcement efforts.

Energy Conservation

In another important area, attention was focused on energy conservation measures. Though FHWA has been active in ridesharing activities since 1974, notable gains were made during fiscal year 1979. Forty-one new ridesharing projects were begun during the year, including vanpool and carpool matching and promotional activities. Seventeen projects were selected to receive special demonstration program funds to test ways to encourage employer involvement in ridesharing programs and to measure the effect of incentives to share rides (such as preferential parking and flexible hours of employment).

Obligations for ridesharing activities during fiscal year 1979 totaled $35.3 million (almost twice the total for the previous 5 years), for a cumulative total of $55.1 million.

Obligations for traffic engineering projects to improve the efficiency of moving people and goods on highways totaled $380 million, and fringe parking projects totaled $25 million, during fiscal year 1979. At the end of the fiscal year, at least 50 high occupancy vehicle traffic facilities (such as reserved highway lanes) were operating in 33 metropolitan areas, and more were under construction.

Much attention was given to traffic control projects, because of their potential contribution to improved traffic flow. Besides signal system improvements and retiming of existing signals, the projects included intersection controls, signal displays, and freeway surveillance and control systems.

FHWA also assisted state and local areas in energy contingency planning. In March 1979, FHWA and the Urban Mass Transportation Administration issued a joint memorandum which stressed that all levels of government needed to prepare to move swiftly in the event of unexpected energy shortfalls. A particularly important part of a contingency plan is an actual deployment strategy, including institutional roles and responsibilities and the regulatory and legal steps necessary to allow emergency plans to be implemented. At the end of the fiscal year, over 50 percent of the metropolitan areas were engaged in contingency planning.

Research Activities

FHWA pursues an extensive research and development program to reduce energy consumption in highway construction and rehabilitation and to promote more efficient use of the highways. It also supports a technology transfer program, to disseminate the information gained through the research. In fiscal year 1979, the research program included approximately 50 major projects and more than 2,000 individual studies.

In one research area, significant progress was made in finding substitute materials to reduce dependence on petroleum-derived asphalt. One particularly successful project involved the use of sulphur as a substitute for asphalt. The new material, called "Sulflex," consisted of sulphur and plasticizing agents.

In another research area, a computer based traffic information and control system was being developed to improve traffic flow along freeways. At the end of the fiscal year, the system was being prepared for a full-scale demonstration on Long Island in New York.

Regulatory Activities

During fiscal year 1979, efforts were made to reduce delays and red tape in the federal-aid highway program. The changes were both regulatory and administrative in nature and were aimed at minimizing the burdens on state and local governments.

An FHWA regulations reduction review considered methods for reducing existing regulations, controlling future regulations, and changing the management philosophies applied to the federal-aid highway program. A major step in implementing the results of the

review was issuance of an FHWA policy which stressed the need to reduce regulatory requirements and to provide for greater involvement of state and local officials and the general public in developing regulations and directives. As a consequence of the review, FHWA cancelled about 15 directives. About 25 more directives were expected to be cancelled, and about 100 directives were to be revised.

To ensure greater involvement in the development of regulations and directives, FHWA began publishing in the Federal Register a semi-annual "Regulations Agenda" listing regulatory actions proposed by the agency over the next 12 months.

Cost Control

Inflation was another major concern during 1979, and the battle against spiraling construction costs continued. FHWA examined bids on 680 federal-aid highway projects that exceeded the estimated cost by 7 percent or more. The bids were rejected on 235 projects and 104 of the projects were revised and readvertised. The revisions resulted in savings to the taxpayers totaling $7.4 million. FHWA also promoted changes in contracting procedures to improve competition; and modified design and construction procedures were encouraged to promote cost effectiveness. The use of recycled materials, particularly asphalt and concrete pavements, was constantly being encouraged.

Civil Rights

Although not a financial assistance program, FHWA's external equal opportunity program continued to be an important part of its activities. Major gains were made in the area of minority business enterprise contracts during fiscal year 1979, with more than $150 million in federal aid contracted to such firms. In addition, FHWA's own procurement contracts with minority firms amounted to nearly $5 million.

FHWA's total full-time employment decreased from 4,930 to 4,456. Minority employment decreased from 864 to 763, and female employment decreased from 1,379 to 1,289. Despite the 9.6 percent decrease in total employment, female employment increased from 28.0 percent to 28.9 percent; however, minority employment decreased from 17.5 percent to 17.1 percent.

Federal Railroad Administration

The Federal Railroad Administration (FRA) is responsible for planning, developing, and administering programs to achieve safe operating and mechanical practices in the railroad industry. Its responsibilities include enforcement of the federal laws and regulations which promote the safety of railroads.

Significant achievements during fiscal year 1979 included: proposed major revisions to the track, equipment, and locomotive regulations, as a result of evaluation of the effectiveness of the safety regulatory program; development and submission to Congress of two pieces of legislation, one to provide federal assistance in restructuring of the nation's railroads and a second to cut back on federal regulation of the railroad industry; and publication of a study detailing the problems of the freight rail system and offering possible alternative solutions.

Train Accidents

Reported train accidents per million train miles increased by 8.5 percent in calendar year 1978, compared to 1977. The 1978 rate was 15 accidents per million train miles, compared to 13.82 in 1977. (A general summary of train accident and casualty data for calendar year 1978 is given in the Appendix.)

When analyzed by contributing cause, the breakdown of 1978 accidents was as follows: defects in right-of-way or structures (track) accounted for 42.5 percent; human factors 25.2 percent; equipment failures 19.2 percent; and miscellaneous causes 13.1 percent.

Track-caused accidents increased by 12.6 percent between 1976 and 1978. During the same period there was a 20.6 percent increase in accidents attributed to human factors. Accidents due to other causes remained constant.

Major accidents occurred at Oak Ridge, Virginia, on December 3, 1978, and at Crestview, Florida, on April 8, 1979. At Oak Ridge, four passengers and two Southern Railway employees were killed when a passenger train derailed as a result of excessive speed on a curve. An additional 35 passengers and 10 employees were injured in the accident. At Crestview, 28 cars of a Louisville and Nashville Railroad Company freight train derailed. Twenty-five of those cars contained hazardous materials. Two placarded tank cars carrying anhydrous ammonia exploded; and eleven other cars released hazardous materials, including acetone, methylalcohol, chlorine, carbolic acid, and anhydrous ammonia.

There were 1,035 train accidents involving hazardous materials in 1978. The accidents caused 232 cars to release hazardous materials, resulting in the evacuation of 26,381 people.

Rail-Highway Crossing Program

In fiscal year 1979, FRA began involving its regional directors of safety in its rail-highway crossing program. Planning also began for the 1980 national rail-highway crossing safety conference, which was to be held in Knoxville, Tennessee. Emphasis on the national rail-highway crossing inventory also was increased, as FRA and the Association of American Railroads jointly sponsored development of a hazard index for all rail-highway crossings.

State Safety Programs

Thirty states, with a total of 84 inspectors, participated in the track and freight car inspection activities of the federal-state rail safety program. During the year, FRA approved 45 new inspector certifications, 28 in track and 17 in equipment. It was anticipated that the number of inspectors would increase to about 180 by the end of fiscal year 1980 and remain at that level through fiscal year 1981.

Enforcement And Regulation

FRA collected $489,655 in civil penalties for violations arising under the Hazardous Materials Transportation Act during fiscal year 1979. This was a 106 percent increase over the amount collected in fiscal year 1978. FRA also concluded its first administrative hearing under the Act. The presiding administrative law judge rendered a decision in FRA's favor, but it was appealed by both parties. Altogether, FRA collected nearly $2.1 million dollars for violations of federal rail safety

statutes during fiscal year 1979. The U.S. Court of Appeals for the D.C. Circuit affirmed a District Court's ruling upholding FRA regulations requiring rear-end marking devices.

On February 7, 1979, FRA issued Emergency Order No. 11, placing certain restrictions on the transportation of hazardous materials over track owned or leased by the Louisville and Nashville Railroad. The order was subsequently found by a federal district court to exceed FRA's statutory authority.

Regulatory Reform

The Administration's rail regulatory reform proposal was introduced in Congress in March 1979. The bill was designed to minimize regulatory constraints on railroad rate and service decisions and to place maximum reliance on the competitive transportation marketplace. At the end of the fiscal year, both houses were considering other regulatory reform proposals. FRA was providing analytical support and background information on the various aspects of the proposals and their potential impacts.

Railroad Mergers And Acquisitions

The railroad industry continued to consolidate into fewer but larger companies. This trend was discussed in detail in the Department's report, mandated by Congress and released in October 1978, entitled "A Prospectus for Change in the Freight Railroad Industry." The Department was actively participating in those railroad restructuring and merger proposals which were under consideration by the Interstate Commerce Commission. For example, the Department was participating in such cases as the acquisition of the Detroit, Toledo and Ironton by the Grand Trunk Western subsidiary of the Canadian National Railroad System; the Southern Pacific's proposed purchase of the Tucumcari line from the estate of the Chicago, Rock Island and Pacific Railway Company; and the proposed combination of the Seaboard Coast Line System and the Chessie System. The FRA foresaw no slackening in this trend and planned to continue entering into those cases that significantly affected the public interest.

Small Coal Mines

The growing use of coal as an energy source for electric utilities was expected to spur a corresponding growth in the coal industry as new mines opened to meet demand. Unit trains continued to be the most efficient and economic means of transporting the large volumes of coal required by utilities. Small independent mines have difficulty utilizing unit train service because they do not ship in sufficient quantities. On the other hand, railroads have difficulty in serving small mines, because of the small quantities shipped, and may do so only when the price of coal is high. The FRA was directing an analysis of three areas in Pennsylvania, West Virginia, and Kentucky in an attempt to develop alternative rail and intermodal logistics systems which would help small coal operators enjoy the benefits of high volume rail service. The research was expected to be completed in 1981.

State Rail Program

During fiscal year 1979, the state rail program provided approximately $73 million to 48 states. The funds were used for a variety of local rail freight service activities, including operating subsidies, branch line rehabilitation or acquisition, and substitute service activities. The mileage eligible for aid under the program increased from approximately 14,000 miles in fiscal year 1978 to nearly 70,000 miles in fiscal year 1979. This increase allowed greater flexibility by the states in designing and implementing their state rail programs. In addition, the Local Rail Service Assistance Act of 1978 provided the opportunity for states to select rehabilitation and new construction projects which would promote restructuring objectives. States were authorized to make loans or grants to railroads to rehabilitate branch lines carrying up to 3 million gross ton miles of traffic per mile annually, to construct facilities, including intermodal terminals, sidings, and new rail connections, and to fund rail relocation projects. Projects on lines carrying up to 5 million gross ton miles were made eligible if the Secretary determined that the project was essential to carry out a restructuring proposal.

Urban Railroad Improvements

FRA was undertaking efforts aimed at providing for rail operations in urban areas which were both more efficient and more compatible with the community. Emphasis was given to working with other federal agencies to use existing resources to improve rail operating efficiency and achieve community development goals. There was a growing concern within communities for resolution of conflicts between rail operations and local objectives, particularly as rail traffic patterns changed due to railroad restructuring and expanding coal traffic.

Northeast Corridor Improvement Program

Fiscal year 1979 was another period of critical program review for the northeast corridor improvement program. Special attention was given to project scope and to a determination of required additional authorization. The redirection study which was initiated in 1978 was finished in January 1979. As a result of this study and subsequent analysis, DOT was seeking an additional authorization of $750 million, which would bring the total project authorization to $2.5 billion and extend the project completion date from 1981 to late 1984. The additional investment was needed in order to provide a reasonable opportunity for rail passenger service to fully cover operating expenses in the northeast corridor.

Following the redirection study, other analyses were expanded, including the off-corridor freight diversion study and the commuter coordination study. The first study examined the possibilities for diverting freight traffic in the southern part of the corridor, to enhance passenger train reliability and improve safety. The second study tried to identify existing and possible future problems along the corridor caused by the improvement program, improved intercity service, and various commuter operations which use the corridor. The problems identified were being coordinated with the appropriate local agencies in an effort to resolve them.

Design and construction efforts continued during 1979. Track work was the primary focus of the construction program in its early years and continued to be a significant factor.

In general, progress was made in all areas, including bridges, signaling, electrification, and stations. In addition to the progress made by the primary construction contractor, Amtrak, the FRA construction program moved forward. The first contract whose funding was to be shared between FRA and a local agency was awarded during the year. This project, at the Newark station, was to provide new escalators. Funds also were obligated during 1979 for the largest corridor construction contract to date, rehabilitation of the Connecticut River Bridge. The awarding of major design and material contracts for signaling and electrification ensured continued progress in fiscal year 1980.

Research And Development

FRA's research and development activities continued to concentrate on near-term improvements in products and processes to enhance safety, improve the economic viability and efficiency of railroad operations, assist Amtrak, and reduce the adverse environmental effects of railroad operations. In addition, approximately 8 percent of the total research and development funding was applied to long term improvements in three areas: advanced systems technology, electrification, and intermodal systems technology. Safety improvement retained the highest overall priority and the most funding (approximately 60 percent of the total).

Notable research and development activities during the year included:

- Continuing operation of the Facility for Accelerated Service Testing (FAST) at the Transportation Test Center. By using FAST, FRA expected to obtain the equivalent of approximately 21 years of inservice experience in three years of testing. FAST accumulated 98.5 million gross tons and 59,151 miles of operation during the year for a cumulative total of 425 million gross tons and 238,552 miles. Normal operations were interrupted twice to incorporate new experiments, and operations were suspended during part of June and July to support performance of the wheel/rail load test, which was expected to establish track parameters which would allow experiments to be performed in a much shorter time.

- Completing a series of tests which were instrumental in reducing the derailment tendencies of a six-axle locomotive operated by Amtrak.

- Completing a congressionally mandated study of the effect of freight car size on railroad safety and efficiency.

- Completing a performance specification for the research locomotive and train handling evaluator, a unique facility to be used to conduct safety experiments on man-machine interactions. A contract for construction of the facility was awarded, with work to be completed in fiscal year 1982.

- Continuing a demonstration project on the Milwaukee Road to develop improvements in rail and highway intermodal operations and marketing. The results continued to be quite satisfactory. Traffic had increased fourfold over predemonstration levels and operating profits were being generated.

- Introducing a classification yard design method which was tested on Conrail, the Boston and Maine, and the Union Pacific.

- Electrifying the 14-mile test loop at the Transportation Test Center. The facility was to be used to test and evaluate electric locomotives and the catenary designs for the northeast corridor improvement program.

Civil Rights

The consolidation of compliance responsibility for federal contractors in the Labor Department, the issuance of DOT's own guidelines to implement the Railroad Revitalization and Regulatory Reform Act of 1976, the Civil Service Reform Act, and the reorganization of the equal employment opportunity program all significantly affected FRA's civil rights and equal employment opportunity responsibilities. FRA was still responsible for determining compliance of all states and railroads receiving financial assistance and for investigating complaints filed by handicapped individuals against federally assisted railroads. A new Equal Employment Opportunity Commission directive for developing agency affirmative action plans expanded and modified the planning process used for establishing agency employment goals. The Civil Service Reform Act also required agencies to assess their minority and female representation and to develop an affirmative recruitment program aimed at eliminating underrepresentation.

Employment in the Alaska Railroad decreased drastically (from 707 in fiscal year 1978 to 548 in fiscal year 1979); but other FRA employment increased from 809 to 877, so FRA's total employment decreased from 1510 to 1425. Total minority employment, including the Alaska Railroad, decreased from 288 (19.1%) to 214 (15.0%), during the same period. Female employment, including the Alaska Railroad, also decreased, from 441 (29.2%) to 308 (21.6%).

Minority Business Resource Center

Fiscal year 1979 was the first full year of operation for the entire minority business resource center program. The minority business affirmative action plans of 35 states and 9 railroads were recommended for approval. An evaluation study of the effectiveness and efficiency of the center's program was begun by an outside consultant. The level of contract awards by railroads to minority business firms rose by almost 25 percent, from $151.7 million in calendar year 1978 to approximately $223.0 million in calendar year 1979. This level was reached despite an unanticipated slowdown in the rate of northeast corridor construction, which severely curtailed minority business enterprise construction activity. The center's national network of field offices (called local outreach centers) reached 28 in 24 cities. Three of the local outreach centers (which provide technical and managerial assistance to minority businesses seeking to participate in rail related business opportunities) were authorized to assist minority businesses to receive contract awards from other Administrations in the Department.

The minority business resource center's marketing assistance clearinghouse expanded its data base to include 6,000 firms and continued to match minority businesses with railroad business opportunities. The clearinghouse was assisted in this effort by the establishment of a telecommunications system to disseminate railroad contract opportunities electronically to the local outreach centers.

The high intensity business development program "packaged" several large rail related business opportunities during the year. This priority program was being helped by the center's investment of $4.6 million in minority venture capital organizations. This was expected to increase the availability of capital to minority businesses working on rail related projects.

The Alaska Railroad

The Alaska Railroad, in its 56th year of operation, moved 1,808,864 revenue tons a total of 257,468,000 ton miles. This was a 16.9 percent decline, compared to fiscal year 1978, reflecting the continuing downturn of the Alaska economy following the oil pipeline construction years.

The Alaska Railroad operates 478 miles of single mainline track extending from the deepwater ports of Seward and Whittier through Anchorage to Fairbanks, with branch lines to Eielson Air Force Base, Fairbanks International Airport, Palmer, and the Suntrana coal fields. Interline freight traffic moves by rail-barge between Whittier and Prince Rupert, British Columbia, and Seattle, Washington. Bulk or loose import cargo is handled at the railroad dock at Seward. During fiscal year 1979, 4,783 carloads moved through Whittier, an 18 percent decline from fiscal year 1978, and 548 carloads moved through Seward, in contrast to over 10,000 during the peak oil pipeline construction year.

Passenger service is operated between Whittier and Anchorage (63 miles) and between Anchorage and Fairbanks (356 miles). The Whittier-Portage-Anchorage run is operated daily during the summer and three times a week in winter months and consists of passenger coaches and flatcars for hauling autos, trucks, buses, and motorhomes. It principally serves the state operated auto ferry, M/V Bartlett, which runs between Whittier and Valdez. Passenger service between Anchorage and Fairbanks operates daily from May to September and twice weekly during the winter. The most important intermediate stop is McKinley Station, location of the McKinley Park Hotel and gateway to Mount

McKinley National Park. Approximately 80 percent of the tourist passengers make a stop at McKinley Park. The 151,045 passengers carried in fiscal year 1979 represented an increase of 20 percent over 1978, and passenger revenue increased 35 percent.

Except for occasional capital appropriations by Congress, the Alaska Railroad operates within its revenues. Prior to fiscal year 1975, it experienced a number of successive years when operating results produced negative cash flows. Positive cash flows in fiscal years 1975–77 (as a result of the trans-Alaska oil pipeline construction activity plus Congressional appropriations totaling $33 million) enabled the railroad to support a capital and major maintenance program of over $46 million. During fiscal year 1979, $3.1 million ($3.0 million from Congress) was expended on capital improvements, primarily on track and roadbed improvement. In addition, $6.3 million of appropriated funds were authorized for dock repairs and cathodic protection of the railroad's Whittier and Seward dock facilities.

Revenues for fiscal year 1979 were $25.2 million (a decrease of 13 percent) and expenses were $31.8 million (a decrease of 6 percent). After depreciation, this amounted to a negative cash flow of $3.4 million. To counter the 54 percent drop in revenues over the past three years, strict management and budget controls were instituted. As a result, despite inflationary pressures, including significant civil service and union wage and benefit increases, expenses were curtailed by over one-third, from $49.6 million in fiscal year 1976 to $31.8 million in fiscal year 1979.

Tonnage comparisons between fiscal years 1979 and 1978 by major classification of revenue freight are shown in Table XIII. All commodity categories declined, primarily because of the slower Alaska economy. However, the significant drop in petroleum tonnage was because a new refinery was built at Fairbanks to process crude oil from the trans-Alaska pipeline. Previously, all petroleum products for the Fairbanks market were hauled by rail from Anchorage. The change decreased petroleum tonnage by 60 percent between 1977 and 1979 and cut railroad freight revenue by $8 million a year.

National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration (NHTSA) has seven basic responsibilities:

- To reduce the risk of death and injury in motor vehicle crashes;
- To ensure manufacturer compliance with vehicle and equipment standards;
- To conserve petroleum resources through the issuance and enforcement of automotive fuel economy regulations;
- To give technical assistance to states and local jurisdictions in order to improve driver and pedestrian safety;
- To plan and supervise research on vehicle performance and design;
- To investigate vehicle accidents in an effort to learn why traffic accidents happen and how injuries are caused; and
- To develop a system for rating automobiles for crashworthiness, damageability, and maintainability.

Problems and Issues

Traffic deaths continued a three year upward trend in calendar year 1978; and traffic deaths exceeded 50,000 for the first time since calendar year 1973. Factors which were contributing to the increase included:

- A growing number of collisions involving heavy trucks and passenger vehicles (deaths from such crashes rose over 40 percent between 1975 and 1978);
- A 37 percent increase in motorcycle deaths (apparently the result of the repeal or substantial weakening of helmet use laws); and
- Decreasing compliance with the 55 mph national speed limit.

In addition to these problems, and to continuing problems with alcohol, new problems were arising, such as the increasing use of mopeds. There was an encouraging note, however. The traffic fatality *rate* (deaths per 100 million vehicle miles) remained almost constant and was well below the 10 year average, indicating that the traffic safety program, as a whole, was achieving considerable success.

At the end of the year, NHTSA faced a number of continuing challenges. They included:

- Determining appropriate fuel economy standards for the period after 1985;
- Upgrading heavy truck safety;
- Planning for field evaluation of the automatic occupant restraint standard which was to take effect in the 1982 model year;
- Improving occupant protection in side impact crashes;
- Establishing useful comparative ratings of crashworthiness, maintainability, and repairability;
- Finding ways to improve vehicle diagnostics, maintenance, and repair;
- Improving enforcement of the 55 mph speed limit; and
- Finding ways to incorporate the results of vehicle safety research into production vehicles.

Motor Vehicle Safety

Automatic Restraints. As NHTSA continued to monitor the industry's development of automatic restraint systems, it was preparing to inform the public about the passive restraint system requirements for 1982–84 model year cars, and to evaluate the actual performance of vehicles with automatic restraints. The two systems that had been developed so far were automatic safety belts and air bags.

Side Impact Protection. NHTSA continued to give high priority to its efforts to upgrade the side impact protection standard. Accident data indicated that about one-third of the fatalities and serious injuries in motor vehicle crashes happen to the occupants of vehicles which are struck in the side. During fiscal year 1979, methods for reducing occupant compartment intrusion in side impacts were being developed, and a new type of test barrier was being designed for use in dynamic compliance tests.

Light Trucks and Vans. The number of light trucks and vans on the road was increasing rapidly, and the number of people being killed and injured in accidents

involving these vehicles was increasing even more rapidly. In an effort to relieve this growing problem, NHTSA was proposing to amend several existing motor vehicle standards to make them applicable to light trucks, buses, and multipurpose vehicles, including vans. Research was also underway to develop automatic restraint systems for these vehicles.

Integrated Vehicle Systems

As motorists responded to continuing shortages and high fuel costs by driving smaller cars, the number of people killed in highway accidents was expected to increase dramatically, unless the safety of these vehicles could be substantially upgraded.

This need to improve *both* safety and fuel economy was the basis of NHTSA's integrated vehicle systems program. The program designed, developed, tested, and evaluated vehicles in an effort to meet national goals for safety, fuel economy, and environmental protection, while simultaneously satisfying consumer needs in terms of cost, styling, utility, and durability. The results of this program formed the basis for much of NHTSA's rulemaking and also demonstrated the advantages of advanced motor vehicle technology and design to the consumer and to the automotive industry.

In fiscal year 1979, the research safety vehicle element of the program was nearing completion. The vehicles that had been developed had demonstrated crash protection capabilities far in excess of any previous automobiles ever built. They demonstrated the feasibility of 50 mph automatic frontal crash protection and 32 mpg fuel economy, compared to no automatic protection and 16 mpg for the current automobile fleet. Since the 1984 vehicle standards would require only 30 mph crash protection and 27.5 mpg fuel economy, it was clear that there would still be considerable opportunity for vehicle improvement beyond the 1984 standards.

Driver Visibility Systems

NHTSA issued two preliminary rulemaking notices to improve driver visibility during the year. One was a proposed new standard on fields of direct view, and the other was a proposed amendment to the existing rearview mirror standards. These regulations, when effective, would minimize obstructions in the driver's line of sight, increase nighttime seeing distances, provide additional protection from daylight glare, reduce injuries to pedestrians and cyclists struck by outside mirrors, and reduce blind spots to the sides and rear.

Defect Investigations

An investigation based on allegations of excessive chassis and suspension rust and corrosion resulted in an agreement to recall over 30,000 1970–71 Fiat model 850 Spyders. The recall was unique, in that it was the first to include provisions for repurchase of the vehicle if repair was not possible. A public hearing was held later to review the adequacy of the manufacturer's recall and to hear evidence concerning corrosion in other Fiat models.

A public hearing was held to review the adequacy of a Volkswagen recall campaign based on a sticking accelerator problem. The hearing was prompted by consumer reports that the repairs were inadequate.

At the end of the year, investigations were underway that involved Uniroyal steel belted radial tires, vehicle jacks for certain Chevrolet and GMC trucks, and Ford Motor Company automatic transmission selector systems.

Investigations completed during the year resulted in 24 safety recalls involving 3,474,088 vehicles and over one million items of equipment. Three of the recalls affected a total of 2,710,000 vehicles. One campaign included 1,800,000 General Motors 1978 mid-size cars with possible front wheel bearing failures. Another recall involved 540,000 Volkswagen 1975–78 cars with an electrical problem which could result in self starting of the engine. The third recall affected 370,000 Cadillac 1977–78 cars which required a modification of accelerator pedals to prevent jamming in the depressed position.

In response to a surge of consumer reports of failing brake master cylinders, a major test program was launched to evaluate the comparative quality of new original equipment cylinders, new aftermarket cylinders, and rebuilt or remanufactured cylinders. Lack of agreement on test requirements or performance standards among the various manufacturers led to an agreement to use recommended practices and performance requirements established by the Society of Automotive Engineers (SAE). The tests showed that original equipment cylinders had the lowest failure rate and rebuilt cylinders the highest. The test results also prompted a review of the SAE procedures by the industry with the intention of making them more realistic.

NHTSA's parts return program completed a feasibility study of the possibility of adding new car dealers, fleet operators, and automotive parts suppliers to the program. The parts return program had depended on independent automotive repair shops, which had voluntarily submitted failed parts and information to

help identify safety defects. The attitudes of the new car dealers, fleet operators, and parts suppliers was positive, and the initial contributions from the fleet operators were most productive.

Compliance Testing

During the year, NHTSA tested 171 vehicles against 283 performance requirements, based on federal motor vehicle safety standards. Over 2,945 tires and 1,343 pieces of equipment, including seat belts and lamps, were also tested. In addition, 161 compliance investigations were completed; and 34 civil penalties (totaling $314,600) were imposed on 32 different manufacturers.

A total of 56 vehicles were tested for compliance with the fuel system integrity requirements. Vehicles from three manufacturers failed to meet minimum standards in the barrier crash test. An ongoing investigation of the 1977 Chevette fuel system resulted in the recall of 320,000 vehicles and payment of a $250,000 civil penalty.

Motor Vehicle Inspection Programs

Twenty-six states, the District of Columbia, and Puerto Rico continued their periodic motor vehicle inspection programs. Many states and localities were considering emissions inspection programs, to comply with the Clean Air Act Amendments of 1977. NHTSA strongly endorsed a combined inspection for safety, emissions, fuel economy, and noise. The cost of inspecting additional items in the course of a single inspection is small compared with the cost of conducting separate inspections. To facilitate combined inspections, NHTSA was prepared to furnish technical information and diagnostic equipment to states and local agencies.

NHTSA continued its efforts to improve the entire inspection, maintenance, and repair process. During 1979, it concentrated on ways to make the repair process more reliable and on ways to improve the acquisition and communication of repair data.

Heavy Duty Trucks

Accidents involving large trucks killed 5,831 people in 1978—a 47 percent increase over 1975. Of those killed, 79 percent were not truck occupants. To counteract this trend, NHTSA made heavy duty truck safety a priority program in its five year rulemaking plan. During fiscal year 1979, several research and development programs were begun in an effort to improve the safety of heavy duty vehicles.

The joint industry-government voluntary truck and bus fuel economy improvement program, managed by NHTSA and supported by the Department of Energy and the Environmental Protection Agency, had over 250 members at the end of the fiscal year. The program was a prime motivator for the voluntary purchase of fuel saving components on new trucks, resulting in calculated fuel savings of 3.6 billion gallons through fiscal year 1979.

The 55 MPH Speed Limit

In 1976, as the oil embargo faded from memory, average speeds began to rise, a trend that continued through early 1979. Although a reversal in that trend became evident by the end of 1979, a majority of motorists were still not complying with the 55 mph limit in many states. The increases in speed were accompanied by a gradual rise in fatalities. Many states were expanding their enforcement programs, and several were urged to increase their penalties for violation of the 55 mph limit.

Bills which would have repealed the 55 mph maximum speed limit were introduced in 19 state legislatures, but none of them passed. In nine states, bills were introduced which would have either reduced or eliminated the penalty for exceeding the 55 mph speed limit. In only one did a reduction bill actually pass.

Radar is the most widely used speed measuring device. In April 1979, a judge in Dade County, Florida, held a hearing regarding the admissibility of radar evidence in his court. He eventually ruled that radar evidence would not be acceptable in his court as the sole evidence in speeding cases. This decision had far-reaching implications because other jurisdictions encountered similar challenges to radar evidence. While most decisions supported radar evidence, several courts accepted the conclusion of the Florida judge.

As part of an ongoing agreement between NHTSA and the National Bureau of Standards (NBS) to develop national standards for police speed measuring devices, NBS was requested to conduct a special study of the six devices that were involved in the Florida decision. Preliminary findings were that the devices in question were accurate, when properly used by a well trained operator.

In addition, NHTSA was developing a model radar training course which was to be made available to law enforcement agencies in 1980. The course was field tested and reviewed by police radar training experts, NBS, and radar manufacturers. It addressed all of the training issues of the Florida case. NHTSA hoped that the course would become standard throughout the coun-

try. The agency also believed that, when accompanied by radar certification and statewide standards and procedures for radar operations, the improved training would overcome the challenges presented in the Florida case.

NHTSA representatives visited European police agencies to study their use of a variety of automated speed enforcement devices. Such equipment would offer substantial cost savings if it could be used by U.S. police. An effort to test such devices in the U.S. and to examine related public and legal acceptance issues was underway.

Safety Belts And Child Restraints

The Highway Safety Act of 1978 earmarked 2 percent of each state's traffic safety apportionment to encourage the use of safety belts. In 1979, NHTSA conducted two series of workshops to stimulate safety belt and child restraint promotional efforts.

One series of workshops was devoted solely to the use of child restraint devices and was designed primarily to stimulate grassroots volunteer groups. The second series of workshops was concerned with the entire occupant restraint area, including manual safety belts, automatic restraints, and child restraints. Emphasis was placed on the development of programs to encourage safety belt usage. This series was designed for state program planners, as well as for various private organizations which cooperate with the states in safety programs.

In September 1979, NHTSA promoted a national child transportation safety month. Printed materials and public service television spots were distributed to over 2,000 newspapers and 800 radio and television stations.

In December 1979, NHTSA conducted a national child passenger protection conference in Washington, D.C. The meeting attracted over 400 participants from 45 states, including interested individuals and organizations, researchers, manufacturers, retailers, and consumer, health, and safety professionals. The conference was designed to increase public awareness of the problem as well as the visibility of the organizations and people working on the problem. It also served as a forum for the exchange of the most recent technical information and for discussion of recent problems and issues. A complete review of the proceedings was to be published in May 1980, containing all the technical papers as well as transcripts of all the workshops.

Pedestrian Safety

The city of Detroit enacted an ice cream truck ordinance as part of a field test sponsored by NHTSA. The Detroit ordinance differed from NHTSA's model in that it mandated alternately flashing amber, rather than red, lights on the front of the vehicle and on the swing type "Stop" arm. During the first full vending season, accidents dropped 77 percent (from a 3 year average of 48.7 accidents down to 11).

The NHTSA model regulation also addressed where and how a vendor might sell, inspection requirements, use of convex mirrors, prohibition of unauthorized riders, and authorization of exemptions. Vending was limited to streets with low traffic densities. Exemptions were permitted for vendors who do not sell to children, such as those who serve business and industrial facilities where children do not gather.

Motorcycle Safety

Final testing of the California improved motorcycle operator licensing and testing project was completed during fiscal year 1979. Preliminary analysis, based upon participation by 40,874 license applicants, found a 13 to 20 percent lower accident rate for persons participating in the program compared with those in the regular California motorcycle operator licensing program.

Work was completed on a motorcycle operator licensing system for use by the states. The system included a model motorcycle operator's manual, three versions of a 25-item knowledge test, two versions of an off-street skill test, and an in-traffic test. The materials and a discussion of their development and effectiveness was distributed to state driver licensing and highway safety officials as well as to public organizations concerned with motorcycle safety. Regional motorcycle operator licensing workshops were planned for early 1980 and technical assistance in implementing the improved motorcycle operator licensing system and examiner training was available to the states.

Although the materials were not officially released until mid-1979, adoption by the states was progressing quickly. By the end of the fiscal year, at least 20 states had adopted the model operator's manual, eight had implemented or were in the process of implementing the off-street skill test, and one had adopted the in-traffic test.

Alcohol Abuse

Drunk driving continued to be the outstanding highway safety problem. A NHTSA-sponsored report noted that:

- Nearly one-half of all drivers killed in traffic accidents had a blood-alcohol content in excess of 0.10 percent (the legal definition of "drunk").

- More than one-third of all pedestrian fatalities had a blood-alcohol content of 0.10 percent or more.

Because of the magnitude of the problem, NHTSA continued to sponsor a variety of programs aimed at reducing the drunk driving problem. They included:

- Research and development programs to improve enforcement and to focus on those segments of the driving population needing special attention, such as young drivers and multiple offenders.
- New techniques and procedures for local police, courts, and rehabilitation agencies to use in handling drunk drivers.
- Teaching programs to get current knowledge on remedial alcohol measures to the states and communities.
- NHTSA-sponsored demonstration projects, such as the comprehensive treatment program in Sacramento, California, to test new remedial concepts and to demonstrate their feasibility in state and local operations.
- A preliminary breath testing program, which formulated a training course that should help promote the use of preliminary breath testing in coping with alcohol related traffic offenses.

Traffic Safety Education

A major study of the effectiveness of driver education programs was underway in Dekalb County, Georgia. In 1979, the study was near its halfway point, with three more years to go. Preliminary data indicated that the driver education group was involved in fewer accidents and violations than the control group. Another important finding was that a course using simulation, range driving, and on-street instruction could be taught at a lower cost ($64 per student) than the traditional courses, which ranged in cost from $85 to $280 per student. There was also a young driver improvement demonstration underway in College Station, Texas. Preliminary data indicated that problem drivers who completed the model retraining program subsequently had better driving records.

Emergency Medical Services

The provision of competent medical care to crash victims at the scene and during transportation to hospitals remained high on the list of traffic safety priorities.

Training those who treat accident victims onsite was considered of paramount importance. The existing crash injury management course was rewritten during fiscal year 1979 and published as the "first responder course". It was intended for use by anyone who might be first on an accident scene. It had other possible uses, such as in prison clinics, coal mines, and national forests and parks.

The basic emergency medical technician training course was also revised, as was the guide for refresher training. Courses in crash victim extrication, instructor training, emergency vehicle operation, dispatcher training, and emergency radio monitor training were either updated or newly published.

Police Traffic Services

Because of increased demands for police services, police administrators must make difficult decisions in allocating limited resources. To aid in making such decisions, NHTSA completed a police traffic services resource allocation manual, which included techniques for more efficient use of police resources.

Motor Vehicle Registration

The states have been encouraged to establish a central vehicle and owner identification and control system for vehicle theft prevention and recovery and reduction of fraud. Cooperation of the states and uniformity of state registration and titling practices has been considered essential to the effectiveness of anti-theft and anti-fraud programs.

During fiscal year 1979, NHTSA recommended comprehensive anti-theft procedures to the states, including special titling for salvage vehicles and checking of vehicle identification numbers. NHTSA also encouraged the states to use a shortened odometer disclosure certification on the title document; and completed a study to show how the states could help manufacturers achieve greater owner response in defect recall campaigns.

Driver Licensing

A phenomenon of great concern to state driver licensing administrators was the fact that almost three million more driver licenses had been issued to individuals in certain age groups than there were persons in those age groups. There were several reasons for the multiple licensing of individual drivers, including:

- Laws in some states that required drivers to be licensed in jurisdictions where they were employed as well as in their state of residence.

- The spread of driving records among several states by problem drivers in order to avoid taking driver improvement courses.
- A license in a second jurisdiction issued to drivers who had been suspended in their home states.
- Issuance of licenses in false identities to persons securing them for unlawful purposes.
- The failure of some jurisdictions to purge their record systems.

NHTSA and state licensing officials were working together to develop guidelines and training programs to address the multiple licensing problem.

Traffic Record Systems

A new standard, published by the American National Standards Institute, identified recommended contents of traffic record systems and enhanced the prospect of eventual standardization of state traffic record data.

Fuel Economy

Fuel economy regulations were making a significant contribution to the nation's effort to reduce petroleum consumption. Fuel savings from existing regulations from model year 1978 through model year 2000 were expected to be approximately 395 billion gallons (9.4 billion barrels). Fuel savings for light trucks were expected to be approximately 114 billion gallons (2.7 billion barrels). Thus, total fuel savings was expected to be more than 500 billion gallons over the next 20 years. This is equivalent to a 19 percent savings—compared to earlier consumption levels—and would provide the nation with the equivalent of an additional five year supply of gasoline for its passenger car and light truck fleet.

Comparative Ratings Of New Cars

The Motor Vehicle Information and Cost Savings Act of 1972 required the Department to develop and publish comparative ratings for all makes and models of automobiles in three areas: crashworthiness (occupant protection), damageability, and ease of diagnosis and repair.

The first results from the crashworthiness tests were released in October 1979. The data was developed as part of a new car assessment project in which 29 vehicles were tested in front and rear crashes at 35 mph. The tests demonstrated that there were substantial differences in the amount of crash protection provided by different automobiles. Testing in fiscal year 1980 was to include more models and was to include other types of crashes.

Related projects included an analysis of automobile fleet data and flat rate manuals as sources of data on maintenance characteristics, a review of insurance data on damageability, and an investigation of the use of field crash data from police accident reports to establish historical crashworthiness ratings.

Odometer Tampering

Enforcement efforts in the eastern states disclosed widespread odometer tampering, particularly among the approximately two million high-mileage fleet lease cars which annually move into the used car market. Among the automobile dealers inspected, 75 percent were found to be out of compliance with odometer record keeping requirements. Several odometer tampering cases were being referred to the Department of Justice for criminal prosecution.

Several important court decisions involving traffic safety were handed down during the year. In addition, one major settlement was reached and 4 initial defect determinations were made.

Pacific Legal Foundation v. DOT—On October 1, 1979, the Supreme Court denied Pacific Legal Foundation's petition for a writ of certiorari to the U.S. Court of Appeals for the D.C. circuit. The Supreme Court's action let stand the Court of Appeals decision, rendered February 1, 1979, which had upheld the agency's automatic restraint regulation, FMVSS 208, against challenges from the Pacific Legal Foundation, which alleged that the technology required for compliance was inadequately tested, and from Ralph Nader, who alleged that to much lead time was permitted by the regulation.

B.F. Goodrich v. DOT (Goodrich II)—On February 8, 1979, the U.S. Court of Appeals for the Sixth Circuit upheld the agency's reissued uniform tire quality grading standards governing bias and bias-belted tires. In dismissing the domestic tire industry's petition for review, the court relied heavily on its 1976 decision *(Goodrich II)* which upheld the main provisions of the regulations.

Koehring Company v. Adams—On July 17, 1979, the U.S. Court of Appeals for the Seventh Circuit affirmed the granting of summary judgement in favor of the plaintiffs by the District Court, which had held that "mobile construction equipment" which is designed to perform work on construction sites and normally uses the public roads only for travel between job sites is not a "motor vehicle" as defined in the National Traffic and Motor Vehicle Safety Act of 1966 and, therefore, not regulated by NHTSA.

Vehicle Equipment Safety Commission (VESC) v. NHTSA—On September 24, 1977, the U.S. Court of Appeals for the Fourth Circuit declined to grant VESC's motion for a stay of the vehicle identification number regulation, FMVSS 115. Oral argument on VESC's petition for review of the regulation was scheduled for November 7, 1979.

Fiat Motors of North America, Inc. v. NHTSA—On September 27, 1979, the U.S. District Court for the Southern District of New York denied Fiat's motion for a preliminary injunction which would have restrained NHTSA from holding a hearing on the adequacy of a recall campaign on 1970–71 Fiat model 850 Spyder vehicles and on whether 1970–74 Fiat model 124 vehicles contained a safety-related defect caused by rust and corrosion. The hearing was to be held on October 3, 1979.

Waddington v. Ford Motor Company and DOT—On May 16, 1979, the U.S. District Court for the Central District of California granted the government's motion to dismiss this complaint, holding that the National Traffic and Motor Vehicle Safety Act of 1966 does not create a private cause of action. Plaintiffs had sought to challenge the adequacy of Ford's remedy to correct a safety related defect in the fuel system of 1971–76 Pintos, as well as the alleged lack of agency action concerning the fuel systems of 1971–76 Maverick, Mustang, and Comet automobiles. Plaintiffs filed a notice of appeal on July 16, 1979.

USA v. Universal Tire Corporation—On May 25, 1979, the U.S. District Court for the District of Maryland entered a consent judgement, restraining the defendant from importation, distribution, and sale of non-sealed beam headlamps and ordering it to pay a civil penalty of $4,000.

1977 Chevrolet Chevette (FMVSS 301-75)—On August 19, 1979, General Motors Corporation paid a compromise civil penalty of $250,000 for failure of the 1977 Chevette to comply with FMVSS 301-75, Fuel System Integrity.

On January 16, 1979, NHTSA made an initial determination that 1970–71 Fiat model 850 Spyder vehicles and 1970–74 Fiat model 124 vehicles contained a safety related defect caused by rust and corrosion. Shortly before the scheduled public hearing, Fiat agreed to recall and remedy the model 850 Spyder vehicles, and the determination with respect to the model 124 vehicles was suspended. On August 22, 1979, NHTSA notified Fiat that it was reinstating the initial determination concerning the 124 vehicles. A public hearing concerning this determination and the adequacy of Fiat's model 850 Spyder recall campaign was to be held on October 3, 1979.

On April 27, 1979, NHTSA made an initial determination that a safety related defect existed in the fuel systems of 1970–71 Ford Maverick and 1971–73 Mercury Comet automobiles. The agency withdrew its initial determination on May 31, 1979, after receiving evidence which suggested that those Mavericks whose fuel systems failed during investigative crash tests had previously undergone repairs. The investigation was continuing.

On August 27, 1979, NHTSA made an initial determination that a safety related defect existed in model 344788 jacks supplied by General Motors Corporation with its 1975–76 Chevrolet C-10, P-10, and G-20 and GMC C-15, P-15, and G-25 light duty trucks. A public hearing, at which GM was to present its views as to why the jacks were not defective, was scheduled for October 9, 1979.

On August 9, 1979, NHTSA made an initial determination that safety related defects existed in the seat backs, headlight switches, and gearshift levers of various model year Mercury Capris. Ford Motor Company initially agreed to recall and repair the headlight switches and subsequently agreed to recall and remedy the seat backs and gearshift levers.

Civil Rights

Several achievements in civil rights were noted in fiscal year 1979. Female representation in nonclerical positions rose nearly 4 percent, from 13.5 percent to 17.4 percent. Five participants were selected to inaugurate a formal upward mobility program. Two career conditional employees—both women, one a minority—were recruited through the cooperative education program.

NHTSA's total employment increased from 842 in fiscal year 1978 to 862 in fiscal year 1979. Female employment also increased, from 289 (34.3%) to 302 (35.0%). However, minority employment decreased, from 187 (22.2%) to 180 (20.9%).

Urban Mass Transportation Administration

The Urban Mass Transportation Administration (UMTA) is responsible for carrying out the Department's mandate to improve urban mass transportation. It is the principal source of federal financial assistance to help both urban and nonurban areas plan, develop, and improve mass transportation systems.

The more significant activities of UMTA during fiscal year 1979 included development of an urban initiatives program, improvement of the urban transportation planning process, and preparation of new legislative proposals.

Urban Initiatives

The urban initiatives program uses mass transit funds to stimulate investment in urban improvements by other federal agencies, by private industry, and by the local communities. By the end of the fiscal year, the 17 cities participating in the program had received a total of $50 million from UMTA for urban initiatives projects.

Legislation

UMTA coordinated the development of the authorization bill that provided the impetus for the establishment of stable and reliable sources of local funds for the Washington Metropolitan Area Transit Authority.

Regulations

"Buy America" regulations for federally funded purchases of transit equipment were published. A proposed rule governing public hearings prior to local fare increases was issued for comment; and regulations for the guidance of urban initiatives projects were published.

Paperwork Reduction

Several changes were made in the administration of UMTA's grant programs, resulting in savings and greater efficiency for grantees. The changes affected accounting procedures, letters of credit, grantee reporting requirements, requisitions, and applications.

In an effort to reduce paperwork requirements for applicants and recipients, UMTA's Region IV and the Federal Highway Administration's Region IV executed a Memorandum of Understanding concerning the allocation of planning funds in Alabama. Under the agreement, UMTA funds were to be used to fund planning in the major urbanized areas, with FHWA funds to be used in other areas. Funding available at the local level was to remain the same, with any imbalance to be adjusted between the two federal agencies. This innovative approach was especially beneficial to local officials, in that only one application had to be processed, with reduced management and reporting requirements.

During the year, funds for 365 grants were disbursed by using letters of credit. The actual payments involved totaled more than $800 million, or 35 percent of UMTA's total disbursements.

Capital Assistance Grants

UMTA approved a total of $2.97 billion in grants during fiscal year 1979. The largest part of the funding, $2.1 billion, was for capital assistance grants.

Discretionary Grants. Most capital grants were made under three discretionary capital grant programs. Under these programs, a total of $1.85 billion was approved for 327 projects.

The largest of the discretionary grant programs, known as Section 3, accounted for $1.225 billion. Included in that total was: $695 million (56.8%) for modernization of existing rapid transit and commuter rail systems; $270 million (22.0%) for new transit systems, including downtown people movers; $210 million (17.1%) for bus system improvements, including $26 million to private nonprofit organizations providing transportation for the elderly and handicapped; and $50 million (4.1%) for urban initiatives projects.

Interstate highway substitution transfers reached a new peak in fiscal year 1979, with $600 million approved for 22 transit related projects in eight cities. The largest transfers were $276.3 million for the Washington, D.C., transit system and $209.2 million for extensions of two of Boston's rail transit lines. By the end of fiscal year 1979, a cumulative total of $2.3 billion in grants had been approved under the interstate transfer program.

During the year, federal aid to urban systems funds furnished $21.3 million for 15 capital projects in seven cities. This brought the total funds diverted from highway to transit related projects under this program to $167.4 million.

Formula Grants. UMTA also administers two formula grant programs, known as Section 5 and Section 18, which provide funds for capital projects. During fiscal year 1974, $252.8 million was approved for capital projects from these programs.

Section 5 provided the vast majority of the formula grant capital funding. A total of $250.7 million, 22.4 percent of all Section 5 funding approved in fiscal year 1979, went to capital projects. The areas which received the largest amounts of capital funds were New York ($43.3 million), Los Angeles ($22.2 million), Detroit ($16.9 million), and Denver ($11.5 million).

Section 18, a program for small urban and rural areas, completed its first year of existence and was the source of $2.06 million that went to 5 states.

Operating Assistance Grants

A total of $871.2 million was approved for fiscal year 1979 operating assistance grants to transit agencies throughout the nation. Most of that funding, $868.5 million, was approved under the Section 5 formula grant program.

The remainder of the operating assistance was granted through the Section 17 and 18 programs. The Section 17 program helps to defray the costs which were imposed on some transit agencies because of the railroad reorganization that led to the formation of Conrail in 1976. Fiscal year 1979 approvals made under this program included $1 million to Chicago and $500,000 to Providence, Rhode Island. Operating assistance grants made under Section 18, the program for transit assistance for small urban and rural areas, totaled $1.1 million and went to four states.

Grant Utilization

A total of 886 projects received UMTA grants during fiscal year 1979. The projects which were funded included:

- Engineering and construction of new rail systems—including heavy rail rapid transit systems in Miami, Baltimore, and Atlanta; a light rail rapid transit system in Buffalo; and downtown people movers in Los Angeles and St. Paul.
- Extensions of existing rail systems in New York, Chicago, Philadelphia, Boston, and Washington, D.C.
- Major urban initiatives projects—including modernization of stations, such as Grand Central Station and 14th Street Station in New York and Kendall Square and South Station in Boston; construction of downtown transit or intermodal transportation terminals in Dallas, Camden, Pittsburgh, and Denver; and joint development projects being undertaken in Baltimore's central business district and at Pittsburgh's midtown station.
- The purchase of 323 rail cars and 19 locomotives.
- The purchase of more than 3,000 buses.
- Construction of 40 bus maintenance and storage facilities and the rehabilitation of five other facilities.
- The purchase of four bus lines from private operators.

The initial 6.7 miles and seven stations of the Metropolitan Atlanta Rapid Transit Authority (MARTA) rail system opened in June 1979. Another 5.1 miles and six more stations were scheduled to open in December 1979. Initial construction of the Metropolitan Dade County and Miami rail system was begun. The system was to have 20 stations along 20.5 miles of right of way.

Service and Methods Demonstration

During fiscal year 1979, 22 new projects were added to the service and methods demonstrations program, bringing the total projects to 87, with an average dollar value of $4 million.

UMTA assists in project development and management, as well as providing an information dissemination effort which ranges from technical presentations at conferences and annual meetings to conducting site visits and seminars for potential users. UMTA also monitors local initiatives, like the move to revise taxicab regulations in San Diego, Portland, and Seattle, the concurrent flow priority lane project on the Garden State Parkway in New Jersey; timed transfer in Portland; and a parking price increase for federal employees.

Pricing Policy

UMTA continued to stimulate the transit industry's interest in fare innovations, such as fare-free service, prepaid fares, and promotional fares. An evaluation of downtown fare-free zones which had been implemented through local initiative found that ridership increased from three to nine times compared to the previous levels.

Transit Service Innovations

In fiscal year 1979, Boston and Memphis successfully implemented auto restricted zones. The Boston project received broad support from local merchants and citizens. The Memphis project included two other downtown transit improvements, opening a downtown terminal and implementing a downtown shuttle service.

Transportation Management

During the year, the design of the transit data reporting system was completed, and the first data from transit systems was being received. The first UMTA report based on this data was to be issued by the summer of 1980. In the meantime, a number of state governments were already using the data being generated to apportion local operating subsidies, a trend that was considered likely to continue.

A benchmark was reached in fiscal year 1979, with the completion of standardized training materials for bus drivers, developed under a grant to the Appalachian Council of the AFL-CIO. The Department's Transportation Safety Institute was distributing the materials and also conducting "train the trainer" sessions for transit systems.

Preliminary work began during the year on the development of a new type of maintenance manual for transit buses.

Planning

A Presidential directive permitting the integration of transportation and air quality planning resulted in the joint administration of certain urban transportation and air quality planning activities by UMTA, the Federal Highway Administration, and the Environmental Protection Agency. Under an agreement between the three agencies, UMTA began administering $50 million in Environmental Protection Agency funds, utilizing UMTA's existing technical studies grant program, thereby streamlining fund delivery and eliminating the need to start a new federal grant program.

Joint administration of planning activities resulted in a $25 million reduction in the cost of developing state implementation plan revisions.

Joint Development

One million dollars of UMTA planning funds was reserved for planning projects under UMTA's new urban initiatives program. UMTA provided a planning and subsequent capital grant for an intermodal ground transportation center at Cedar Rapids, Iowa.

Diesel Taxicabs

Sixty-six pairs of taxicabs were put into service in New York City, with one vehicle in each pair having a diesel and the other a gasoline engine. The vehicles were tested for two years, with each vehicle accumulating approximately 8,000 hours of running time and about 120,000 miles of travel.

Final analysis of the test results confirmed a preliminary finding that the diesel taxis obtained about 50 percent more miles per gallon of fuel than their gasoline counterparts. The diesel exhausts were also considerably lower in all regulated emissions. Both types of vehicles seemed equally acceptable to drivers and passengers.

Transit Accessibility

In compliance with Section 504 of the Rehabilitation Act of 1973, the Department issued a final rule, effective July 2, 1979, which required accessibility for the elderly and handicapped to all Department of Transportation funded facilities and vehicles. Its provisions were expected to significantly affect the technological development of buses and paratransit vehicles.

Downtown People Movers

Los Angeles, St. Paul, Detroit, and Miami were awarded capital grants to conduct preliminary engineering studies for downtown people mover systems. UMTA also awarded technical studies grants to Baltimore, Indianapolis, Jacksonville, Norfolk, and St. Louis, to be used to conduct feasibility studies and to refine their project plans.

Automatic Vehicle Monitoring

Automatic vehicle monitoring systems use electronic data transmission to continuously inform a control center about the location of every transit bus. The data can be used to reroute or reschedule buses to improve schedule adherence. In large systems, a computer can be used to communicate instructions to the driver.

The advantages of automatic vehicle monitoring include better service to passengers, more efficient use of vehicles, automatic collection of data for management use, and greater passenger and driver security.

After five years of research, development, and evaluation, UMTA chose Los Angeles for its first test of a monitoring system in actual revenue service. Equipment was being installed on four bus routes covering a 30 square mile area.

Innovative Shared-Ride Taxis

Two prototypes of a new and radically improved vehicle for shared-ride taxi service were exhibited throughout the country. The vehicles were well received by the public and the taxi industry. Having established their feasibility and acceptability, UMTA was proceeding with the development of additional prototype vehicles with similar characteristics, but emphasizing lower costs of manufacturing, maintenance, and operation.

Rapid Transit Subsystems

For several years, UMTA conducted an advanced subsystems development program. Among the promising subsystems developed under this program were a monomotor truck and a synchronous brake system.

In fiscal year 1979, UMTA began a new subsystem program that places more emphasis on providing solutions to the day-to-day problems of operating and maintaining rapid rail transit systems. The aim of the new program was to apply existing technology to solving operational problems. Examples of the kinds of subsystems the new program was expected to improve were air conditioners, doors, automatic fare collection equipment, and escalators.

Urban Rail Construction Technology

UMTA's urban rail construction technology program tries to deal with the problems of increasing rail transit construction costs and deteriorating rail transit facilities. The increasing construction costs were partially the result of institutional factors which limited the use of new technologies, contracting practices, and management procedures.

UMTA's program consisted of four elements—contracting and management, track and wayside equipment, elevated structures, and tunneling. The program also included technology sharing and practical demonstrations of new construction methods and technologies. Implementation of the new methods was yielding substantial savings, in comparison with the costs of conventional construction practices.

Automated Guideway Systems

After a year's service hiatus for an expansion in guideway length, the building of two additional stations, and numerous improvements, the Morgantown, West Virginia, people mover system (now with five stations, 8.6 miles of guideway, and 71 vehicles) was reopened for public use in July 1979 and began revenue service early in September 1979. The expanded system was expected to carry 4 to 6 million passengers during its first year of revenue service.

Safety and Product Qualification

After a Departmental study, UMTA was assigned the safety responsibility for rapid rail and light rail transit systems. Under a plan approved by the Secretary in May 1979, UMTA was to emphasize specific areas, including safety information, system safety, and safety research.

UMTA promptly began development of a safety information reporting and analysis system. Rapid rail and light rail transit systems nationwide were to report accident and incident data to the system.

Under the system safety part of the plan, the Department's Transportation Safety Institute conducted four safety and system assurance courses and six explosion security management seminars. Over 200 people participated, including transit operators, suppliers, consultants, government officials, and other transit specialists.

Civil Rights

UMTA and its grantees made progress during the year in assisting minority business enterprises. Over $3.5 million was awarded to minority businesses through UMTA direct procurements, and UMTA grantees made awards in excess of $174 million through their respective procurement programs. In addition, UMTA grantees deposited more than $5.75 million in minority owned banks.

In fiscal year 1979, UMTA had 183 minority employees (35%), compared to 177 minority employees (33%) in fiscal year 1978. Female employees also increased, from 241 (45%) in fiscal year 1978 to 244 (47%) in fiscal year 1979.

Saint Lawrence Seaway Development Corporation

The Saint Lawrence Seaway Development Corporation was created in 1954 to construct the U.S. facilities for the Saint Lawrence Seaway project. Since 1959, when the Seaway opened to navigation by ocean-going ships, the Seaway Corporation has been responsible for operation and maintenance of that part of the Seaway between Montreal and Lake Erie which is within the territorial limits of the U.S.

Unlike most government agencies, the Seaway Corporation is self-sustaining. All operation, maintenance, administrative, and capital improvement costs are paid from revenues obtained from tolls charged to vessels which transit the system.

A total of 55.3 million metric tons of cargo moved through the Montreal-Lake Ontario section in 1979 on 4,633 commercial ships. This tonnage was the Seaway's third highest and was just 2.8 percent short of the 1978 level. Cumulative tonnage transported on the Seaway, since its 1959 opening, has amounted to 848 million metric tons.

Bulk cargo in 1979 totaled 51.4 million metric tons, 1.8 percent less than in 1978. This decline was accounted for primarily by a 10.9 percent decrease in grains, which totaled 24.7 million metric tons. Although grains were down from the previous year, 1979 still ranked as the Seaway's second highest grain shipment year. Government aid cargoes of 159,000 metric tons topped the 1978 level by 23.3 percent, and iron ore movements showed a strong gain of 9.4 percent, to 14.8 million metric tons.

General cargo in 1979 totaled 3.9 million metric tons, 15 percent lower than the previous year. Iron and steel moved via the Seaway dropped 12.9 percent, to 3.1 million metric tons, reflecting the reduced demand for steel by the U.S. automobile industry and the continued impact of the federal government's trigger price mechanism to control foreign steel imports. Container tonnage also declined in 1979.

Seaway tonnage in 1979 initially appeared headed for a record, but the effects of strikes by grain handlers were felt at several ports. The most serious strike, from the viewpoint of Seaway grain traffic, was the one at Duluth.

Beginning July 6, 1979, the Duluth strike sharply curtailed the shipment of export grain via the Seaway for an 82-day period. During that time, a backlog of several million tons of grain developed at Duluth, as well as at other Western Great Lakes ports. The problem was compounded by the inability of rail cars and barges to handle the added cargo on short notice, a bumper grain harvest, and unprecedented foreign demand.

The grain situation was partially alleviated by two late-1979 agreements between the U.S. and Canada. One agreement delayed the Seaway closing deadline by three days; the other allowed some Canadian lake vessels carrying grain to exit the Montreal-Lake Ontario section despite their failure to comply with the closing procedures. These agreements enabled more than 15 million additional bushels of U.S. and Canadian export grain, valued at over $53 million, to pass through the Seaway. The extra grain movements contributed favorably to the balance of payments and farm economies of both nations.

During 1979, the Seaway Corporation continued its ice control research under the congressionally funded Great Lakes/Saint Lawrence Seaway navigation season extension program. This eight-year program, designed to prove the feasibility of a longer Seaway shipping season, expired at the end of fiscal year 1979.

Specific work conducted in 1979 by the Seaway Corporation, as part of the program, included further hydraulic/ice modeling of portions of the Saint Lawrence River, and demonstrations, on the river, of electronic navigation guidance systems that may permit river voyages in all seasons. By year-end, a final feasibility report had been completed by the Corps of Engineers and was under review by other Army officials. The report concluded that it was feasible to extend the navigation season on the upper Great Lakes and their connecting channels to 12 months, and on the Montreal-Lake Erie section to 10 months.

During the year, the Seaway observed several significant milestones: May 13, 1979, was the 25th anniversary of the creation of the Seaway Corporation and of the signing of the legislation that authorized U.S. participation in the Seaway navigation project; April 25, 1979, was the 20th anniversary of the opening of the Seaway to deep-draft navigation; and November 27, 1979, was the 150th anniversary of the opening of the Canadian Welland Canal—the navigational link between Lakes Erie and Ontario.

All of these occasions were formally commemorated in two bi-national ceremonies held September 7, 1979. The first was hosted by the Seaway Corporation at Dwight D. Eisenhower Lock near Massena, N.Y., and the second was hosted by the St. Lawrence Seaway Authority of Canada at St. Catherines, Ontario—near the Welland Canal.

In November 1979, the Seaway Corporation announced it was committing $200,000 to a joint research project, with the Great Lakes Commission, Ann Arbor, Michigan, to develop a comprehensive plan for Seaway marketing strategies and to develop a marketing organization to execute the plan. A contract for this project was expected to be awarded in the spring of 1980.

According to the Seaway Act of 1954, the Seaway Corporation is required to submit to the President, for transmission to Congress, a separate annual report based on calendar year results. Single copies of the most recent report may be obtained at no charge from: The Office of Communications, Saint Lawrence Seaway Development Corporation, P.O. Box 520, Massena, New York 13662.

Research and Special Programs Administration

The Research and Special Programs Administration (RSPA) was created in 1977 to provide a single organization for handling multi-modal transportation programs. It was given responsibility for many of the safety and research problems which were common to all modes, as well as a variety of special programs, such as transportation security.

Hazardous Materials

During the year, RSPA modified many of its hazardous materials regulations to put more emphasis on performance standards rather than prescribing a specific design for hazardous materials containers. In addition, the regulations governing the shipment of hazardous materials by rail, highway, and water were consolidated; and labeling and packaging requirements were removed from small packaged consumer goods such as household cleaning solvents and aerosol deodorants. (Because of the small quantity of hazardous material involved, such goods pose little danger to the public.)

RSPA also proposed new specifications for cargo tanks used in transporting cryogenic liquids and for rail tank cars which transport flammable or pressurized cryogens. Under the proposed specifications, most exemptions dealing with the transportation of cryogenics would be eliminated.

During the year, RSPA worked with the Environmental Protection Agency to develop joint hazardous materials regulations and a single set of transportation standards for hazardous wastes. In addition, proposed regulations were issued which would ensure proper identification and reporting of hazardous materials spills. The joint standards and regulations were intended to reduce the total number of regulations being issued, as well as laying the groundwork for future cooperative regulatory efforts.

The transportation of flammable gases and anhydrous ammonia in uninsulated pressurized railway tank cars continued to be a major problem. As a result, the Department prohibited new construction of uninsulated tank cars for the transport of hazardous materials and required owners of cars currently in use to equip them with safety devices, including approved couplers.

In addition, RSPA issued proposed regulations requiring adoption of a numerical identification system for hazardous materials. The four-digit numbers would be included on shipping papers and packages associated with hazardous materials and on labels affixed to portable tanks, cargo tanks, and tank cars. The code would improve the ability to quickly identify hazardous materials, making possible the rapid transmission of accurate information to and from scenes of accidents involving hazardous materials.

Pipeline Safety

During the year, RSPA amended the federal pipeline safety standards to enable pipeline operators to utilize advanced pipeline technology and new engineering designs. The amendments included:

- Approving new techniques for bending steel pipe in the field;
- Permitting the use of certain existing pipelines in gas service without having to meet the design and construction requirements for new pipelines;
- Establishing qualifying procedures for personnel who make joints used with plastic pipe; and
- Establishing requirements for the written procedures prepared and followed by operators of hazardous liquid pipelines.

To help deal with the special safety concerns posed by liquified natural gas, RSPA issued proposed regulations which would cover the location, design, and construction of new facilities as well as operation, security, maintenance, and corrosion control procedures for both new and existing facilities. In addition, RSPA was studying methods to reduce the special risks associated with liquified natural gas spills, including a natural gas cloud emanating from a spill and a catastrophic spill which could overwhelm containment measures.

RSPA continued to cooperate with the Department of Interior on activities related to the Trans-Alaska crude oil pipeline. To reduce the risk of oil leaks in the extreme temperatures of the arctic environment, the Department of Transportation arranged for the National Bureau of Standards to conduct a study of the design and construction of the pipeline and its above the ground support systems. The study included consideration of the acceptability of certain welds based on fracture mechanics, rather than on welding standards.

Because of the potential advantages of fracture mechanics analysis, RSPA funded a three-year study of the technique. The study was to develop specific procedures to be followed in the use of fracture mechanics analysis for assessing the acceptability of pipeline welds.

RSPA also participated in the inspection and evaluation of monitoring instruments for the Trans-Alaska pipeline. The instruments were designed to detect any danger from changes in the curvature or alignment of the pipeline, particularly where the line is buried in thawed unstable soil.

Alaska Natural Gas Pipeline

The proposed Alaska Natural Gas Pipeline would be the largest gas pipeline construction project ever undertaken in North America. Construction costs (estimated at well over $13 billion) were to be financed by a consortium of private pipeline corporations. When operations begin (scheduled for the mid-1980's), the 4,253-mile pipeline will bring Alaska's Prudhoe Bay gas to the U.S. west coast and upper midwest. The pipeline's design capacity will be 26 billion cubic feet per day, or about five percent of the domestic supply.

During the year, the Department of Transportation either completed or made significant progress on several gas pipeline related activities, including the following:

- Amending Title 40 of the Code of Federal Regulations, Part 192, to allow the use of arctic grade X-70 pipe;
- Beginning the selection of a technical support contractor to provide engineering expertise in specialty areas and to provide inspection monitoring support;
- Initiating a program, through the National Bureau of Standards, to include fracture mechanics in the weld acceptance criteria;
- Evaluating a series of blast tests performed by the Northwest Alaskan Pipeline Company to determine criteria for blasting in the proximity of the existing oil pipeline;
- Evaluating the first in a series of tests designed to determine the required toughness of the pipe (to prevent running fractures) and to determine the need for mechanical crack arrestors;
- Planning the pipeline frost heave test program, which was to start at a test site near Fairbanks in late 1979.
- Preparing safety and reliability evaluations of the design proposal for the 1,083-mile Canadian segment of the natural gas pipeline system; and
- Reviewing the Department of Interior's draft stipulations for the pipeline's eastern and western legs.

Safety Training

During fiscal year 1979, RSPA's Transportation Safety Institute offered 62 separate safety courses and seminars, training over 6,000 persons. Most of the courses were taught at the Institute's facilities in Oklahoma City. However, other training, such as pipeline safety evaluation seminars, were offered at different locations throughout the nation in support of state and local needs.

Since transportation safety is not just a federal concern, state and local governments and private industry were increasing their participation in the Transportation Safety Institute's programs. During the early years of operation (1971–73), only federal employees were trained at the Institute. By 1974, however, 25 percent of those trained were from state and local governments and industry. The percentage increased to 45 percent in 1976, 50 percent in 1977, and 55 percent in 1978. In 1979, the total enrollment was as follows: 35 percent local employees, 30 percent industry personnel, 18 percent federal employees, 15 percent state employees, and 3 percent international. The increasing share of students from outside the federal governments was the result of efforts to make the Institute more responsive to state and local governments and the transportation industry and of success in standardizing safety programs throughout the nation.

In addition to its direct hands-on training, RSPA developed several programs designed to help emergency services personnel respond properly to hazardous materials spills or accidents. In these programs, training materials were mailed to state and local safety agencies and fire marshall associations. The material included 30 different varieties of hand-out pamphlets on

hazardous material regulations as well as an emergency action guide. The guide described the hazards associated with certain substances and provided information to guide emergency service personnel during the first 30 minutes following a spill or accident. In addition, a 20-hour course was created to train emergency service personnel and laymen in hazardous materials identification and in effective handling of hazardous materials, pipeline, and radioactive materials emergencies.

Research And Development

RSPA's research and development activities ranged from transportation safety and energy to improvements in the capacity and cost effectiveness of the nation's transportation system. The principal thrust was to stimulate innovation and the development of advanced transportation technologies.

University Research

The university research program was established to assure that the resources of the higher education community are effectively brought to bear on transportation problems. In fiscal year 1979, 35 new contracts were awarded to 28 universities in 19 states, and 14 contracts for continuing research were renewed. Ten contracts were awarded to minority colleges.

Three studies carried out under the university research program provided data for use in establishing policies for regulatory reform of the motor carrier industry. The university research program also contributed to the study of fracture mechanics, to studies of internal combustion engine economy through electronic control of fuel and air intake, and to improving air traffic flow to reduce flight schedule disruption at airports during periods of peak demand.

Systems Engineering

The major objectives of RSPA's systems engineering research activities ranged from evaluating advanced technology and establishing research and development programs to providing the Department with data to be used for assessing the results of applied research.

One systems engineering program, which began in 1978, developed information about both conventional and nonconventional fuel resources. Initially, the program emphasized fuel demand and conservation opportunities and the environmental impacts of surface transportation. In 1979, however, attention switched toward assessing the future role of nonconventional fuels in automotive transportation.

Another systems engineering program was concentrating on motor vehicle traffic control systems. Although automatic traffic control systems were widely used, it appeared that their effectiveness could be greatly improved. One area which needed improvement was the ability to respond quickly to unforeseen traffic jams. During the year, RSPA completed research on a system which would provide instantaneous feedback on traffic flow.

Transportation Systems Center

The Department continued to carry out much of its multimodal and intermodal research through RSPA's Transportation Systems Center in Cambridge, Massachusetts. The Center served primarily as a systems research and development organization which supported the high priority technological and socio-economic research needs of the Department.

The Transportation Systems Center was also the focal point for the exchange of technical information, ideas, and experience on a wide range of transportation topics. Approximately 5,000 requests for technical information were handled by the Center in 1979. In addition, the Center received several thousand requests for each of its publications, which include state of the art overviews, primers, directories, and information guides. The state of the art reports included information on bus and carpool lanes, light rail systems, and rural transportation services for the elderly and handicapped. A key feature of this service was the Center's ability to tailor its publications to the individual requirements of state and local governments.

The Center also disseminated information on newly developed or improved transit options. A key element of this process continued to be the preparation of a summary report on the Urban Mass Transportation Administration's technology development programs entitled *Innovation in Public Transportation.* Updated annually, the report covered such topics as: bus and paratransit vehicles; rail and construction technologies; automation, safety, and product qualification; services for special users; conventional transit service innovations; and transportation planning.

Fuel Economy

Research by the Transportation Systems Center was instrumental in determining the 1981–84 automobile fuel economy standards and the 1980–81 light duty

truck and van standards. At the end of the fiscal year, the Center was helping to formulate the 1982–85 light truck standards.

As part of their research efforts, the Center identified methods that automotive manufacturers might use in order to achieve better fuel economy. The Center's research indicated that the fuel economy of the 1985 U.S. automotive fleet could be 50 percent better than the 1978–79 fleet.

The Office of the Secretary was given responsibility by Congress to conduct a study of the costs and benefits associated with setting uniform truck size and weight limits. As part of that effort, the Transportation Systems Center was asked to provide technical support. As a result, a report containing a variety of capacity, cost, and energy consumption relationships for trucks of different sizes and configurations was completed. The report indicated that, when loaded to maximum capacity with goods weighing 15 pounds per cubic foot or less, two 27 foot trailers pulled by separate tractors were more energy efficient than a single 45-foot trailer. The study also found that trailers on flat cars and conventional box cars were significantly more fuel efficient, regardless of weight, than any other truck or railway car configurations analyzed.

Transportation Information Systems

During the year RSPA completed a comprehensive study of the Department's information systems. The study recommended adopting several goals and major changes in the way the Department managed its information activities. The recommended goals included:

- Acquiring more extensive and reliable information about the U.S. transportation system, including the movement of goods and people, investments, operations, and energy consumption;
- Developing more efficient data collection, storage, processing, and use systems;
- Seeing that Department of Transportation interests were effectively represented in the data collection activities of other agencies and improving Department of Transportation access to such data; and
- Establishing methods for more timely decision making concerning information systems.

Among the changes recommended was the integration and centralization of transportation related data activities. The centralized system would share information with other agencies, the transportation industry, and the general public. The study also advocated the establishment of a centralized statistical services and data generation staff to provide data to the Department and other government agencies.

Emergency Transportation

During the year, RSPA continued to upgrade its emergency transportation planning data. In addition, it began analyzing the transportation data of other transportation related agencies to see if it met current emergency planning requirements. Included were the Interstate Commerce Commission, the Federal Preparedness Agency (part of the Federal Emergency Management Agency), the Army Corps of Engineers, the Urban Mass Transportation Administration, the Federal Railroad Administration, The Federal Highway Administration, and the Federal Aviation Administration. Plans were made to review and analyze such data annually. In addition, RSPA continued its efforts to improve its response monitoring and coordination system so that it could effectively deal with snow storms, floods, and ice blocked rivers, as well as accidents, work slowdowns, and work stoppages or other events which have an adverse effect on the U.S. transportation system.

During 1979, RSPA was directly involved in monitoring the following crises:

- The Three Mile Island nuclear power plant shutdown;
- The 1979 diesel fuel shortage;
- A strike of the Brotherhood of Railway and Airline Clerks and the United Transportation Union against the Rock Island Railroad;
- A strike of bus operators in Los Angeles, California; and
- An International Brotherhood of Teamsters strike against Emery Freight.

Transportation Security

RSPA continued to coordinate an industry and government program aimed at reducing cargo losses attributable to theft, pilferage, damage, or other causes. The program emphasized the importance of security awareness and the need to make cargo security a part of normal management practices.

During fiscal year 1979, RSPA trained approximately 800 state and local law enforcement officials in 11 regional cargo security seminars; published a maritime cargo loss prevention handbook; prepared a report on damage caused by factors other than theft and pilferage; maintained an automated cargo damage and loss reporting system; and conducted approximately 200 special cargo security analyses.

Transportation Facilitation

RSPA's responsibilities included the coordination of transportation services to improve the movement of goods and passengers. This included efforts to simplify and standardize the procedures and requirements involved in the day-to-day activities of travelers, shippers, and carriers.

During the year, RSPA continued its efforts to reduce the paperwork burden by encouraging the application of modern computer and communications technology to the processing and transmission of cargo data. For example, it funded a joint government and industry task force which was to establish electronic data interchange standards. The standards, a comprehensive set of rules, procedures, and specifications for a wide range of computer-to-computer communications, were quickly adopted by the private sector to carry out numerous data interchange functions. Late in the year, RSPA began planning a joint U.S.-Canadian demonstration of international application of the standards.

RSPA also represented U.S. interests in the trade facilitation programs of the Economic Commission for Europe, where the Department of Transportation was instrumental in preventing premature endorsement of a set of electronic data interchange standards which were ill-suited to U.S. trade requirements. However, RSPA did recommend adoption of a supplementary group of 18 transportation related passenger and pedestrian oriented symbol signs. These symbols, along with 34 recommended in 1974, completed a comprehensive transportation series and paved the way for the entire group of 52 to be sent to the Secretary for official endorsement. The symbols, which were to be submitted to the American National Standard Institute for consideration as an American National Standard, would help to bridge language barriers and simplify basic messages at travel facilities worldwide.

Navigation

RSPA was involved in revising radionavigation planning in the Department. The revision was needed to meet the increasing demand for coordinated radio navigation planning.

Radionavigation traditionally had been split between civil and military organizations. Nonetheless, military systems such as TACAN (Tactical Air Navigation), Loran-C (Long-Range Navigation), Omega, and Transit could be used by civilians. Conversely, military operations near the continental U.S. sometimes depended on civil systems for navigation. Despite this overlap, there was no central planning board or coordination body to deal with radionavigation problems. To fill this need, the Department of Transportation and the Department of Defense executed an interagency agreement for coordination of radionavigation planning. Under the terms of the agreement, the Departments were to have joint responsibilities and were to assure that their respective needs were met with minimal overlap or gaps between radionavigation systems.

RSPA's radionavigation planning activities during fiscal year 1979 also included: establishment of a Departmental management structure to improve radionavigation system planning; issuing a contract to the State of New York to conduct an experiment to investigate the potential of Loran-C for land use; initiating Loran-C flight tests in Vermont; and beginning development of a multimodal planning model to be utilized to evaluate long range plans for radionavigation systems.

Automotive Technology Research

In February 1979, RSPA helped the Secretary of Transportation convene a conference of 700 scientists and engineers from industry, academia, consumer groups, and government to consider: (1) whether it is feasible to develop a motor vehicle which will consume less petroleum than the 1980 federal standards mandate; and (2) what the federal government's role should be in stimulating automotive technology. Many of the conferees concluded that the U.S. could reduce its dependence on imported petroleum by improving automotive technology and design and that the federal government should provide leadership in planning and funding the research needed to develop improved automotive technology.

At the end of the fiscal year, an interagency planning staff, headed by RSPA, was developing plans to secure industry and government approval of a cooperative research agreement. The agreement would include joint industry and government funding and planning of a wide range of research by university, industrial, and federal laboratories.

The Department also proposed the establishment of an Office of Automotive Research, with total funding to include $800 million from the federal government and $500 million from industry, to be spread over a 10-year period beginning in fiscal year 1981.

Civil Rights

RSPA's total employment increased from 839 in 1978 to 855 in 1979. Female employment increased from 222 (26.5%) to 234 (27.4%). Minority employment also increased, from 98 (11.7%) to 106 (12.4%).

Appendix

United States Railway Association

During 1979, the United States Railway Association (USRA) completed a preliminary staff analysis of alternatives to the Consolidated Rail Corporation (Conrail) system.

In the Amtrak Reorganization Act of 1979, Congress directed USRA to participate in the preparation of two studies regarding the feasibility of transfering USRA functions to other agencies. One study, to be conducted jointly with the Department of Transportation, was to determine the feasibility of transferring all USRA nonlitigation functions. The other study, to be conducted jointly with the Department of Justice, was to determine the feasibility of transferring USRA litigation functions. Both studies were due in Congress on March 1, 1980.

Consolidated Rail Corporation

During 1979, the Consolidated Rail Corporation (Conrail) made substantial progress towards self-sufficiency in several key areas. Conrail's net cash flow from operations improved by about $200 million over the previous year and its requirements for federal funds decreased by $45 million. Conrail's ability to meet its freight delivery schedules also improved over the previous year.

In May 1979, Conrail and the United States Railway Association (USRA) signed a major amendment to their financing agreement, providing for the additional $1.2 billion in government investment authorized by Congress in November 1978, which brought the total authorization to $3.3 billion. The revised agreement provided for quarterly and annual goals, to be agreed to between Conrail and USRA, in the following areas: (1) labor expenses in relation to revenues; (2) service (i.e., meeting freight schedules); (3) maintenance (i.e., rail, tie, surfacing goals); (4) additions and improvements to Conrail's physical plant; (5) net cash flow from operations; and (6) reductions in federal funds required.

The goals were set to ensure that Conrail's plans anticipated making adequate progress towards self-sufficiency. Conrail's performance was to be measured against these goals.

National Railroad Passenger Corporation

The National Railroad Passenger Corporation (Amtrak) was established by the Rail Passenger Service Act of 1970. The Act was the result of a joint decision by the executive branch and Congress to relieve the nation's railroads of the financial burden of providing intercity rail passenger service. According to railroad reports to the Interstate Commerce Commission, that service was causing them to lose hundreds of millions of dollars every year.

Amtrak began operations on May 1, 1971, as a mixed ownership (private and public) corporation whose basic system was prescribed by the Secretary of Transportation and whose operations were supported by federal funds.

The federal subsidy was expected to be an interim measure, because the stated goal of the legislation was to establish intercity rail passenger service on a "for profit" basis. In short, Amtrak was an experiment to see if a company with no concern other than transporting intercity passengers by rail could operate at a profit.

Establishment of an integrated nationwide intercity rail passenger service with reliable, comfortable, and convenient service, starting from the declining service that was present at the time of Amtrak's conception, was a formidable task. By fiscal year 1978, the experiment had produced some positive results, including an increase in ridership and in passenger miles. However, its financial performance had been disappointing.

Table XIV and Figure 7 show the overall Amtrak performance through fiscal year 1979. Despite some fluctuations, Amtrak ridership, revenues, and passenger miles had increased steadily. The only noticeable decrease from the overall upward trends occurred during the period of returning availability of petroleum after the oil embargo of 1973–74. Overall ridership during the fiscal year 1972–79 period increased by more than 50 percent and revenues increased by 150 percent, but costs increased by 226 percent. As a result, the system-wide average deficit per passenger more than doubled during the period, and revenues were covering only about 39 percent of costs.

Because of the rapidly increasing size of this federally funded deficit, the Department of Transportation was directed by Congress to undertake, in cooperation with Amtrak, a comprehensive reexamination of Amtrak's route structure. The Department's final report on the Amtrak route system was submitted to Congress in January of 1979. As a result of the petroleum shortages in the spring of 1979, the Administration and Congress agreed to discontinue only those routes with the least potential to contribute to fuel savings. The route changes, which were to become effective October 1, 1979, would reduce the 27,000 mile system to approximately 23,700 miles, while retaining national and interregional rail passenger service.

In fiscal year 1979, Amtrak's ridership increased by 13.2 percent to 21.4 million passengers, compared to the

previous fiscal year's 18.9 million passengers, indicating its important role in the national transportation picture. Although Amtrak continued to show operating deficits, the utilization of intercity rail passenger service, an energy efficient mode of transportation, was expected to increase in importance as fuel contraints became more severe. Therefore, the Department still considered it essential to develop the ability to control rail passenger costs, so that rail passenger service could be preserved as a viable transportation alternative.

TABLE I. U.S. Department of Transportation Funding Levels, Budget Authority, Obligations, and Outlays, Fiscal Year 1979.

(dollars in millions)

Organization	*Funding Levels* [1]	*Budget Authority*	*Obligations*	*Outlays*
Office of the Secretary	44	43.8	42.5	53.5
United States Coast Guard	1,532	1,546.8	1,474.6	1,436.5
Federal Aviation Administration	3,091	3,090.8[2]	3,062.4	2,849.6
Federal Highway Administration	8,923	8,284.3	9.031.0	7,253.3
National Highway Traffic Safety Administration	254	259.4	251.3	246.5
Federal Railroad Administration	837	837.4	713.5	445.7
National Railroad Passenger Corporation	779	779.0	779.0	779.0
Urban Mass Transportation Administration	3,518	2,365.3[3]	3,150.2[4]	2,458.0[6]
Saint Lawrence Seaway Development Corporation	8	—	7.7	(3.3)
Research and Special Programs Administration	24	24.4	28.0	16.9
Office of the Inspector General	11	6.4[6]	5.4[6]	4.8
SUBTOTAL	19,022	17,237.7	18,545.6	15,540.5
Proprietary Receipts from the Public	—	(55.0)	—	(55.0)
TOTALS	19,022	17,182.7	18,545.6	15,485.6

[1]Funding level takes into consideration the various types of financing used by the Department, including budget authority, obligations, and loan guarantee limits, to provide an overall indication of Departmental activity.

[2]Excludes a $54.4 million reappropriation for facilities and equipment.

[3]Includes $400 million in interstate highway system transfer grants.

[4]Includes $699.7 million in interstate highway system transfer grants.

[5]Includes $398 million in interstate highway system transfer grants.

[6]Excludes transfers from other accounts.

TABLE II. U.S. Department of Transportation Authorized Full-Time Permanent Positions, Fiscal Year 1979.

Organization	*Positions*
Office of the Secretary	1,105
United States Coast Guard	45,888[1]
Federal Aviation Administration	58,142
Federal Highway Administration	4,540
Federal Railroad Administration	1,686
National Highway Traffic Safety Administration	874
Urban Mass Transportation Administration	563
Saint Lawrence Seaway Development Corporation	194
Research and Special Programs Administration	918
Office of the Inspector General	473
TOTAL	114,383

[1]Includes 6,862 civilians and 39,026 military.

TABLE III. U.S. Department of Transportation Full-Time Civilian Minority and Female Employment, 1969–79.

Year	*Total* [1]	*Minority* [1]	*Percent*	*Total* [2]	*Female* [2]	*Percent*
1969	58,726	4,586	7.8	52,400	8,856	16.9
1970	62,278	5,216	8.4	56,805	9,979	17.6
1971	66,918	6,063	9.1	60,047	10,411	17.3
1972	66,219	6,372	9.6	61,368	10,773	17.6
1973	65,227	6,248	9.6	61,851	10,316	16.7
1974	65,098	6,773	10.4	62,723	10,898	17.4
1975	68,241	7,647	11.2	64,588	11,373	17.6
1976	71,679	8,989	12.5	65,758	11,745	17.9
1977	72,809	9,573	13.1	74,289	12,833	17.3
1978	71,972	9,623	13.4	73,471	12,752	17.4
1979	71,040	9,807	13.8	72,139	12,650	17.5

[1]Minority employment figures and related totals exclude employees in Hawaii and Guam.

[2]Female employment figures and related totals cover white collar positions only for the years 1972–75, general schedule positions only for the years 1969–71 and 1976, and all employees for the years 1977–79.

NOTES:

1. Minority data are as of June 30 for 1969; September 30 for 1977–79; and May 31 for all other years .
2. Female data are as of May 31 for 1970, 1971, and 1976; June 30 for 1969; September 30 for 1977–79; and October 31 for 1972–75.
3. Source of the data for 1972–75 was the Civil Service Commission.

TABLE IV. U.S. Coast Guard Financial Statement, Fiscal Year 1979.

Appropriated Funds	[1] *Funds Available*	*Total Obligations*	[2] *Unobligated Balance*
Operating Expenses	987,546,096	986,496,488	1,049,608
Acquisition, Construction & Improvements	367,134,006	212,791,032	154,342,974
Alteration of Bridges	14,900,000	4,682,217	10,217,783
Retired Pay	177,500,000	176,576,890	923,110
Reserve Training	40,600,000	40,506,234	93,766
Research, Development, Test and Evaluation	21,165,873	20,989,983	175,890
State Boating Safety Assistance	5,172,586	5,009,174	163,412
Pollution Fund	25,783,257	18,741,710	7,041,547
Offshore Oil Pollution Compensation Fund	225,712	—0—	225,712
TOTAL	1,640,027,530	1,465,783,728	174,233,802
Reimbursements			
Operating Expenses	22,694,576	22,694,576	—0—
Acquisition, Construction, & Improvements	988,958	932,872	56,086
Reserve Training	26,242	26,242	—0—
Research, Development, Test and Evaluation	1,168,787	1,102,174	66,613
TOTAL	24,878,563	24,755,864	122,699
Trust Funds			
Coast Guard General Gift Fund	54,970	10,299	44,671
Surcharge Collection, Sale of Commissary Stores	434,384	247,448	186,936
Coast Guard Cadet Fund	3,339,992	3,339,992	—0—
TOTAL	3,829,346	3,597,739	231,607
Intra Governmental Revolving Funds			
Coast Guard Supply Fund	62,892,146	62,767,917	124,229
Coast Guard Yard Fund	35,965,215	31,026,960	4,938,255
TOTAL	98,857,361	93,794,877	5,062,484

Accrued Gross Expenditures	*Total*	*Direct*	*Reimbursable*
Operating Expenses	1,000,665,552	978,293,576	22,371,976
Acquisition, Construction & Improvements	202,509,361	200,102,110	2,407,251
Alteration of Bridges	7,237,597	7,237,597	—0—
Retired Pay	176,579,915	176,579,915	—0—
Reserve Training	39,800,897	39,776,328	24,569
Research, Development, Test and Evaluation	21,387,361	20,829,131	558,230
State Boating Safety Assistance	4,894,527	4,894,527	—0—
Pollution Fund	14,639,769	14,639,769	—0—
Coast Guard General Gift Fund	10,156	10,156	—0—
Surcharge Collections, Sale of Commissary Stores	247,448	—0—	247,448
Coast Guard Cadet Fund	3,339,992	—0—	3,339,992
Coast Guard Supply Fund	62,240,137	—0—	62,240,137
Coast Guard Yard Fund	29,784,434	—0—	29,784,434
Special Statistical Work, Transportation	150,418	—0—	150,418
TOTAL	1,563,487,564	1,442,363,109	121,124,455

TABLE IV. U.S. Coast Guard Financial Statement, Fiscal Year 1979 (continued).

[1] Funds available included unobligated balances brought forward from prior year appropriations as follows:

Acquisition, Construction, and Improvements	
Appropriated Funds	80,517,005
Reimbursements	3,264,638
Research, Development, Test & Evaluation	
Appropriated Funds	1,165,873
Reimbursements	175,799
State Boating Safety Assistance	172,586
Pollution Fund	11,178,145
Coast Guard General Gift Fund	30,455
Surcharge Collections, Sale of Commissary Stores	207,912
Coast Guard Supply Fund	487,848
Coast Guard Yard Fund	10,033,179
TOTAL	107,233,440

[2] Unobligated balances remained available for obligation in fiscal year 1980 as follows:

Acquisition, Construction & Improvements	154,146,586
Research, Development, Test & Evaluation	242,503
Alteration of Bridges	10,217,783
State Boating Safety Assistance	163,412
Pollution Fund	7,041,547
Coast Guard General Gift Fund	44,671
Surcharge Collections, Sale of Commissary Stores	186,936
Coast Guard Supply Fund	124,229
Coast Guard Yard Fund	4,938,255
Offshore Oil Pollution Compensation Fund	225,712
TOTAL	177,331,634

TABLE V. Summary of Active Airpeople, as of December 31, 1975–78.

Category	Year			
	1975	*1976*	*1977*	*1978*
PILOT				
Student	176,978	188,801	203,510	204,874
Private	305,863	309,005	327,424	337,644
Commercial	189,342	187,801	188,763	185,833
Airline Transport	42,592	45,072	50,149	55,881
Other [1]	13,412	13,567	14,086	14,601
TOTAL	728,187	744,246	783,932	798,833
NONPILOT				
Mechanic	205,436	212,303	220,768	228,743
Ground Instructor	51,365	53,464	55,717	57,738
Ground Tower Operator	23,956	24,584	25,107	25,388
Flight Engineer	26,788	27,560	29,871	33,028
Other [2]	16,389	16,670	17,121	17,453
TOTAL	323,934	334,611	348,584	362,350
FLIGHT INSTRUCTOR	44,777	46,236	49,362	52,201

[1]Includes helicopter only, glider only, and lighter-than-air pilot certificates.

[2]Includes flight navigators, parachute riggers, and dispatchers.

TABLE VI. Hijacking Attempts on U.S. and Foreign Aircraft, Including General Aviation Aircraft, Calendar Years 1968–78.

Aircraft Category	*Year*										
	1968	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
U.S.	22	40	27	27	31	2	7	12	4	6	13
Foreign	13	47	56	31	31	20	19	13	14	26	18
TOTAL	35	87	83	58	62	22	26	25	18	32	31

TABLE VII. U.S. Certificated Route Air Carrier Accidents, Fatalities, Passenger Carried, Passenger Miles Flown, and Passenger Fatality Rate, in Scheduled Domestic and International Passenger Service, Calendar Years 1968–78.

Year	Aircraft Accidents		Fatalities			Passengers Carried [1]	Passenger Miles Flown (000)	Passenger Fatalities Per 100 Million Passenger Miles
	Total	Fatal	Passenger	Crew and Other	Total			
1968	53	13[2]	305	40	345	150,162,701	119,612,578	0.255
1969	48	7	132	20	152	159,213,414	132,161,593	0.100
1970	39	2	2	1	3	171,697,097	139,157,806	0.001
1971	41	6[2]	174	20	194	173,664,737	145,678,876	0.119
1972	43	7	160	26	186	188,938,932	159,722,015	0.100
1973	32	6	197	20	217	202,207,000	171,436,549	0.115
1974	42	7	420[3]	40	460	207,449,006	173,349,894	0.197[4]
1975	28	2	113	9	122	205,059,571	174,173,138	0.065
1976	21	2	36	2	38	223,313,131	190,915,721	0.019
1977	17	2	64	11	75	240,326,516	206,205,410	0.031
1978[p]	20	4	13	3	16	268,000,000	232,900,000	0.006

[1]Beginning in 1970, carriers were required to report revenue passenger enplanements; whereas prior to 1970, revenue passenger originations were reported.

[2]Includes 2 midair collisions that were not fatal to air carrier occupants.

[3]Includes 79 passenger deaths that occurred in sabotage accidents.

[4]Does not include passenger deaths that occurred in sabotage accidents.

[p] Preliminary

TABLE VIII. U.S. General Aviation Accidents, Fatalities, Aircraft Hours Flown, Accident Rates, and Fatality Rate, Calendar Years 1968–78.

Year	Accidents [1]		Fatalities [2]	Aircraft Hours Flown	Accidents per 100,000 Aircraft Hours Flown		Fatalities per 100,000 Aircraft Hours Flown
	Total	Fatal			Total	Fatal	
1968	4,968	692	1,399	24,053,000	20.6	2.86	5.82
1969	4,767	647	1,495	25,351,000	18.8	2.55	5.90
1970	4,712	641	1,310	26,030,000	18.1	2.46	5.03
1971	4,648	661	1,355	25,512,000	18.2	2.59	5.31
1972	4,256	695	1,426	26,974,000	15.8	2.57	5.29
1973	4,255	723	1,412	29,974,000	14.2	2.41	4.71
1974	4,425	729	1,438	31,413,000	14.1	2.31	4.58
1975	4,237	675	1,345	32,024,000	13.2	2.10	4.20
1976	4,193	695	1,320	33,922,000	12.3	2.04	3.89
1977	4,286	702	1,436	35,792,000	12.0	1.96	4.01
1978[p]	4,609	795	1,690	36,600,000	12.6	2.17	4.62

[1]Suicide and sabotage accidents are included in all computations except accident rates (1970–1, 1972–3, 1973–2, 1974–2, 1975–2, 1976–4, 1977–1).

[2]Includes air carrier fatalities in accidents involving collisions with general aviation aircraft (1969–82, 1972–5, 1978–142).

[p] Preliminary

TABLE IX. Federal-Aid Highway Obligations, Fiscal Years 1969–79.

(dollars in millions)

Funding Program	Year												Total
	1969	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*TQ**	*1977*	*1978*	*1979*	
Interstate	3,424	3,349	3,298	3,293	2,633	2,901	4,015	2,059	557	3,297	3,191	4,442	36,459
ABC[1]	1,041	1,048	971	1,036	698	516	425	190	4	47	17	7	6,000
Primary[2]	15	64	62	60	64	620	1,266	488	237	1,184	1,320	1,440	6,825
Secondary[3]	8	37	38	42	45	285	483	253	89	287	364	361	2,292
Urban	—	—	—	11	84	340	368	412	152	657	854	739	3,617
Bridge Replacement	—	—	—	41	53	38	181	94	22	196	171	616	1,412
Safety	—	13	49	296	325	181	419	440	117	513	568	568	3,489
Emergency Relief	20	83	32	44	145	149	144	82	34	85	114	147	1,079
Other	150	197	211	272	216	309	614	697	488	905	843	621	5,523
TOTAL	4,658	4,791	4,661	5,095	4,268	5,339	7,915	4,715	1,700	7,171	7,442	8,941	66,696

[1]Prior to fiscal year 1975, ABC figures include primary, secondary, and urban funds. Since fiscal year 1974, ABC figures include urban extension, primary, and secondary funds.

[2]Prior to fiscal year 1975, primary figures include rural primary and priority funds. Since fiscal year 1974, primary figures include rural primary, priority primary, discretionary priority primary, and consolidated primary funds.

[3]Secondary figures include only rural secondary funds.

*Transition Quarter—July 1, 1976 to September 30, 1976.

TABLE X. Federal Highway Administration Motor Carrier Safety Inspection Activity, Calendar Years 1974–79.

Year	*Inspections Performed*	*Vehicles Taken Out of Service*	*Drivers Taken Out of Service*
1974	25,939	7,867	688
1975	16,372	4,961	425
1976	16,907	5,574	456
1977	18,730	6,985	558
1978	25,695	9,978	597
1979	26,127	10,779	1,980

TABLE XI. Summary of U.S. Train Accidents and Casualties, Calendar Years 1972–78.

Category	Year							% Change	% Change
	1972	1973	1974	1975	1976	1977	1978	1977–78	1975–78
Number of Train Accidents[1]									
Collisions	1,348	1,657	1,551	1,002	1,370	1,363	1,476	+ 08.3	+47.3
Derailments	5,509	7,389	8,513	6,328	7,934	8,075	8,763	+ 08.5	+38.5
Other	675	652	630	711	944	926	1,038	+ 12.1	+46.0
TOTAL TRAIN ACCIDENTS	7,532	9,698	10,694	8,041	10,248	10,362	11,277	+ 08.0	+40.2
Number of Casualties in Accidents of all Types.									
Trespassers Killed	537	578	565	524	457	458	492	+ 07.4	−06.1
Trespassers Injured	586	614	674	703	766	689	746	+ 08.3	+06.1
Passengers Killed	47	6	7	8	5	4	13	+225.0	+62.5
Passengers Injured	680	503	574	1,307	998	503	1,252	+148.9	−04.2
Employees on Duty Killed	127	158	140	110	100	114	122	+ 07.0	+10.9
Employees on Duty Injured[2]	12,456	13,098	15,620	47,318	57,889	61,028	65,071	+ 06.6	+37.5
All Other Persons Killed	1,234	1,174	1,196	918	1,068	954	1,019	+ 06.8	+11.0
All Other Persons Injured	4,208	4,039	3,950	4,978	5,678	5,647	5,476	− 03.0	+10.0
TOTAL NUMBER OF PERSONS KILLED	1,945	1,916	1,908	1,560	1,630	1,530	1,646	+ 07.6	+05.5
TOTAL NUMBER OF PERSONS INJURED	17,930	18,245	20,818	54,306	65,331	67,867	72,545	+ 06.9	+33.6

[1]Monetary reporting threshold prior to 1975 was $750, in 1975 it was increased to $1,750, in 1977 it was increased to $2,300.

[2]Includes lost time cases only prior to 1975. Reporting requirements were changed in 1975 to be comparable to OSHA reporting requirements—including cases with lost or restricted time; those requiring medical treatment beyond first aid; termination of employment; transfer to another job; loss of consciousness; and occupational illnesses.

TABLE XII. Summary of U.S. Rail-Highway Grade Crossing Accidents and Casualties, Calendar Years 1972–78.

Accidents [1] *and Casualties* [2]	*Year* 1972	1973	1974	1975	1976	1977	1978	*% Change* 1977–78	*% Change* 1975–78
Accidents at Highway Grade Crossings Involving Motor Vehicles									
Total Accidents	3,222	3,190	3,089	10,925	11,700	11,849	11,999	+01.3	+ 09.8
Number of Persons Killed	1,190	1,078	1,128	788	978	846	929	+09.8	+ 17.9
Number of Persons Injured	3,201	3,215	3,166	3,600	4,343	4,455	4,120	−07.5	+ 14.4
Total Rail-Highway Grade Crossing Accidents and Resulting Casualties									
Total Accidents	3,379	3,379	3,278	11,354	12,144	12,299	12,435	+01.1	+ 09.6
Number of Persons Killed	1,260	1,186	1,220	978	1,114	944	1,021	+08.2	+ 04.4
Number of Persons Injured	3,285	3,306	3,260	4,168	4,831	4,649	4,256	−08.5	+ 02.1
Railroad Casualties									
Passengers on Trains									
Number of Persons Killed	0	0	0	1	0	0	0	0	−100.0
Number of Persons Injured	0	35	18	96	58	24	18	−25.0	− 81.2
Employees on Duty									
Number of Persons Killed	1	5	3	2	0	11	2	−81.8	0
Number of Persons Injured	68	103	102	32	54	193	180	−06.7	+462.5
Total Railroad Casualties									
Number of Persons Killed	1	5	3	3	0	11	2	−81.8	− 33.3
Number of Persons Injured	68	138	120	128	112	217	198	−08.8	+ 54.7

[1] All impacts between on-track equipment and highway users were reported beginning in 1975. Prior to 1975, such impacts were reported only if they resulted in a reportable casualty or in $750 in damages to railroad on-track equipment, signals, track, track structures, or roadbed.

[2] Include lost time cases only prior to 1975. Reporting requirements were changed in 1975 to be comparable to OSHA reporting requirements—including cases with lost or restricted time; those requiring medical treatment beyond first aid; termination of employment; transfer to another job; loss of consciousness; and occupational illnesses.

TABLE XIII. Alaska Railroad Revenue Freight Traffic, by Commodity, Fiscal Years 1975–78.

Commodity	Revenue Freight Tons (000's)					% Change	% Change
	1975	1976	1977	1978	1979	1978–79	1975–79
Sand and Gravel	N/A	N/A	699.5	727.2	637.5	-12.3	N/C
Coal	N/A	N/A	550.0	593.3	523.9	-11.7	N/C
Petroleum, Oil, and Lubricants	557.4	632.6	532.3	373.9	219.6	-41.3	-60.6
Forwarder Traffic (Piggyback)	95.3	114.2	99.7	99.5	88.7	-10.9	-06.9
Forest Products	119.5	124.3	82.0	67.8	55.2	-18.6	-53.8
Agricultural Products	13.2	9.4	11.5	8.2	7.1	-13.4	-46.2
Manufactured Goods and Miscellaneous Commodities	1114.6	1251.1	330.3	307.8	276.9	-10.0	N/C
TOTAL TONNAGE	1900.0	2131.6	2305.3	2177.7	1808.9	-16.9	-04.8

N/A—Not Available, included in "Manufactured Goods and Miscellaneous Commodities."
N/C—Not Comparable.

TABLE XIV. Amtrak Passengers, Passenger Miles, Daily Train Miles, Revenues, Costs, Deficit, and Ratios, Fiscal Years 1972–79.

Category	Year								%Change	%Change
	1972	1973	1974	1975	1976	1977	1978	1979	1978–79	1972–79
Passengers (millions)	13.7	14.7	16.7	15.8	16.9	19.2	18.9[r]	21.4	+13.2	+ 56.2
Passenger Miles (billions)	2.9	3.3	4.4	3.7	3.8	4.1	4.0	4.9	+22.5	+ 69.0
Daily Train Miles (thousands)	71.5	72.9	77.0	80.8	81.5	86.5	86.4	86.5	+00.1	+ 21.0
Revenue ($ millions)	152.7	177.3	242.2	246.5	268.0	311.3	313.0[r]	381.5	+21.9	+149.8
Corporate Costs ($ millions)	66.9	46.6	24.9	35.6	43.3	56.8	60.2[r]	46.6	-22.6	- 30.3
Operating Costs ($ millions)	239.3	272.5	413.2	524.2	630.9	776.0	830.1[r]	951.5	+14.6	+297.6
Total Costs ($ millions)	306.2	319.2	438.1	559.8	674.3	832.9	890.3[r]	998.1	+12.1	+226.0
Deficit ($ millions)	153.5	141.9	195.9	313.3	379.3	521.6	577.3	616.8	+ 6.8	+301.8
Operating Ratio (Revenue/Costs)	0.499	0.556	0.553	0.440	0.398	0.374	0.352	0.382	+ 8.6	- 23.4
Deficit Per Passenger Mile (¢)	5.3	4.2	4.4	8.3	10.9	12.7	14.4	12.6	-12.5	+137.7

[r] Revised

TABLE XV. Summary of U.S. Motor Vehicle Activities and Fatalities, Calendar Years 1969–79.

Year	*Licensed Drivers (millions)*	*Registered Motor Vehicles (millions)*	*Vehicle Miles Traveled (billions)*	*Traffic Fatalities* [1]	*Fatality Rate* [2]
1969	108.3	107.4	1,062[r]	53,543	5.04[r]
1970	111.5	111.2	1,110[r]	52,627	4.74[r]
1971	114.4	116.3	1,179[r]	52,542	4.46[r]
1972	118.4	122.6	1,260[r]	54,589	4.33[r]
1973	121.5	130.0	1,313[r]	54,052	4.12[r]
1974	125.4	134.9	1,281[r]	45,196	3.53[r]
1975	129.8	137.9	1,328[r]	44,525	3.35
1976	134.0	143.5[r]	1,406[r]	45,523	3.24[r]
1977	138.1	147.3[r]	1,470[r]	47,878[r]	3.26[r]
1978[r]	140.8	153.6	1,548	50,331	3.25
1979[p]	143.1	159.4	1,525	51,083	3.35
% Change 1978–79	+1.6	+3.8	−1.5	+1.5	+3.1
% Change 1969–79	+32.1	+48.4	+43.6	−4.6	−33.5

[1] Deaths attributable to motor vehicle accidents and occurring within 30 days after the accidents.
[2] Fatalities per 100 million vehicle miles.
[p] Provisional
[r] Revised

TABLE XVI. Summary of U.S. Monthly Fatalities, Motor Vehicle Mileage, and Fatality Rates, Calendar Years 1974–79.

Category and Year	*Month*											
	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
Fatalities[1]												
1974	2,904	2,615	3,218	3,362	3,696	4,176	4,248	4,548	4,139	4,286	4,129	3,875
1975	3,053	2,832	3,309	3,290	4,005	4,037	4,324	4,337	3,896	3,916	3,800	3,726
1976	3,038	2,969	3,197	3,569	4,113	3,979	4,613	4,348	3,994	4,250	3,534	3,919
1977	2,738[r]	2,877	3,497	3,730	4,060	4,320	4,960	4,586	4,250	4,560	4,148	4,152
1978[r]	2,733	2,657	3,511	3,950	4,384	4,633	4,999	4,998	4,782	4,795	4,385	4,504
1979[p]	3,077	3,117	4,070	4,124	4,376	4,504	4,663	4,704	4,698	4,667	4,364	4,719
% Change 1978–79	+12.6	+17.3	+15.9	+4.4	−0.2	−2.8	−6.7	−5.9	−1.8	−2.7	−0.5	+4.8
% Change 1974–79	+6.0	+19.2	+26.5	+22.7	+18.4	+7.9	+9.8	+3.4	+13.5	+8.9	+5.7	+21.8
Mileage[2]												
1974[r]	94.4	85.8	100.3	103.8	111.4	113.1	120.0	123.2	108.4	111.8	104.3	104.3
1975[r]	96.9	91.6	107.1	107.3	117.0	119.8	124.0	125.9	110.7	114.7	105.6	106.9
1976[r]	102.2	98.3	114.0	116.7	123.0	123.8	130.6	131.6	119.2	120.9	112.7	112.7
1977[r]	102.9	102.9	120.5	122.1	129.5	129.9	136.9	137.0	124.8	128.0	119.1	116.8
1978[r]	105.7	104.4	127.0	127.7	136.7	138.3	144.2	145.7	132.7	136.3	125.4	124.2
1979[p]	110.1	107.9	130.7	130.1	133.9	131.6	135.1	140.5	128.6	132.2	122.4	121.9
% Change 1978–79	+4.2	+3.4	+2.9	+1.9	−2.0	−4.8	−6.3	−3.6	−3.1	−3.0	−2.4	−1.8
% Change 1974–79	+16.7	+25.8	+30.6	+25.3	+20.3	+16.4	+12.5	+14.0	+18.7	+18.2	+17.3	+16.8
Fatality Rate[3]												
1974[r]	3.08	3.05	3.22	3.24	3.32	3.69	3.54	3.69	3.82	3.83	3.96	3.71
1975[r]	3.15	3.09	3.09	3.07	3.42	3.37	3.49	3.44	3.52	3.41	3.60	3.49
1976[r]	2.97	3.02	2.80	3.06	3.34	3.21	3.53	3.30	3.35	3.51	3.13	3.48
1977[r]	2.66	2.80	2.90	3.05	3.13	3.32	3.62	3.35	3.41	3.56	3.48	3.55
1978[r]	2.59	2.54	2.76	3.09	3.21	3.35	3.47	3.43	3.60	3.52	3.50	3.63
1979[p]	2.79	2.87	3.11	3.17	3.27	3.42	3.45	3.35	3.65	3.53	3.57	3.87
% Change 1978–79	+7.7	+13.0	+12.7	+2.6	1.9	+2.1	−0.6	−2.3	+1.4	+0.3	+2.0	+6.6
% Change 1974–79	−9.4	−5.9	−3.4	−2.2	−1.5	−7.3	−2.5	−9.2	−4.5	−7.8	−9.8	+4.3

[1]Deaths attributable to motor vehicle accidents and occurring within 30 days after the accidents.
[2]Billions of vehicle miles.
[3]Fatalities per 100 million vehicle miles.
[r] Revised
[p] Provisional

TABLE XVII. Summary of Reported Gas Pipeline Failures and Casualties, Calendar Years 1970–78.

Year [1]	Distribution Lines					Transmission and Gathering Lines				
	Number of Failures	Fatalities		Injuries		Number of Failures	Fatalities		Injuries	
		Employees	Non-Employees	Employees	Non-Employees		Employees	Non-Employees	Employees	Non-Employees
1970	676	1	20	32	170	343	1	0	8	8
1971	875	6	36	36	329	410	2	1	14	10
1972	884	2	26	32	262	409	3	3	23	13
1973	893	1	32	48	285	471	1	1	3	16
1974	1,017	1	19	31	283	460	1	3	7	13
1975	979	0	8	29	191	394	5	1	8	9
1976	1,036	3	50	66	253	543	2	8	28	19
1977	1,530	2	27	39	381	466	4	3	19	11
1978	2,088	4	16	44	276	533	1	10	14	74

[1]Date for calendar years 1974–78 include information from telephonic reports which were not included in data for calendar years 1970–73.

TABLE XVIII. Summary of Reported Liquid Pipeline Accidents and Casualties, Calendar Years 1968–78.

Year	Accidents	Fatalities	Injuries	Commodity Loss (Barrels)
1968	499	11	32	392,588
1969	403	5	4	343,691
1970	347	4	21	521,849
1971	308	1	8	245,057
1972	309	8	19	360,654
1973	273	7	8	379,365
1974	256	10	11	293,643
1975	255	7	15	319,423
1976	209	5	5	255,037
1977	238	3	19	228,429
1978	256	3	10	280,794

FIGURE 1. U.S. Department of Transportation Funding Levels, Fiscal Year 1979.

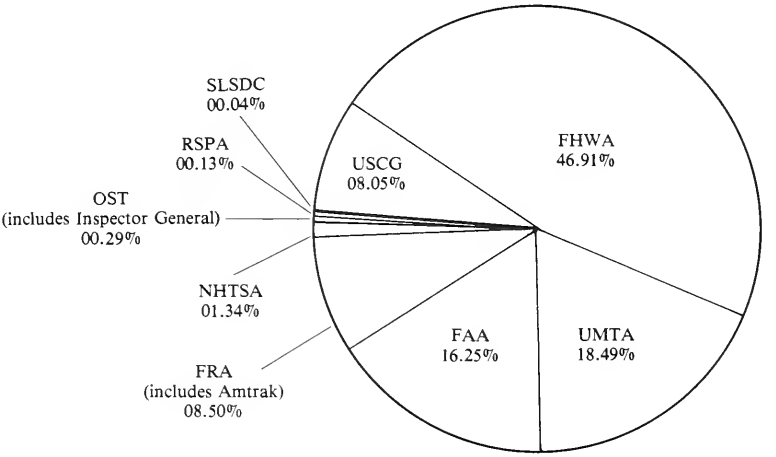


FIGURE 2. U.S. Department of Transportation Authorized Full-Time Permanent Positions, Fiscal Year 1979.

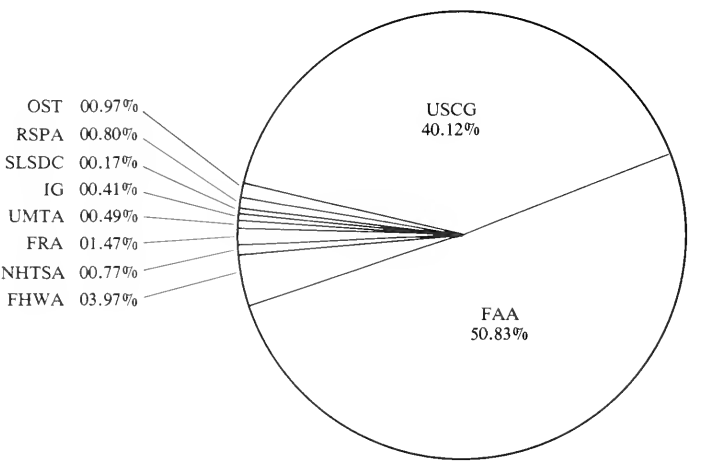
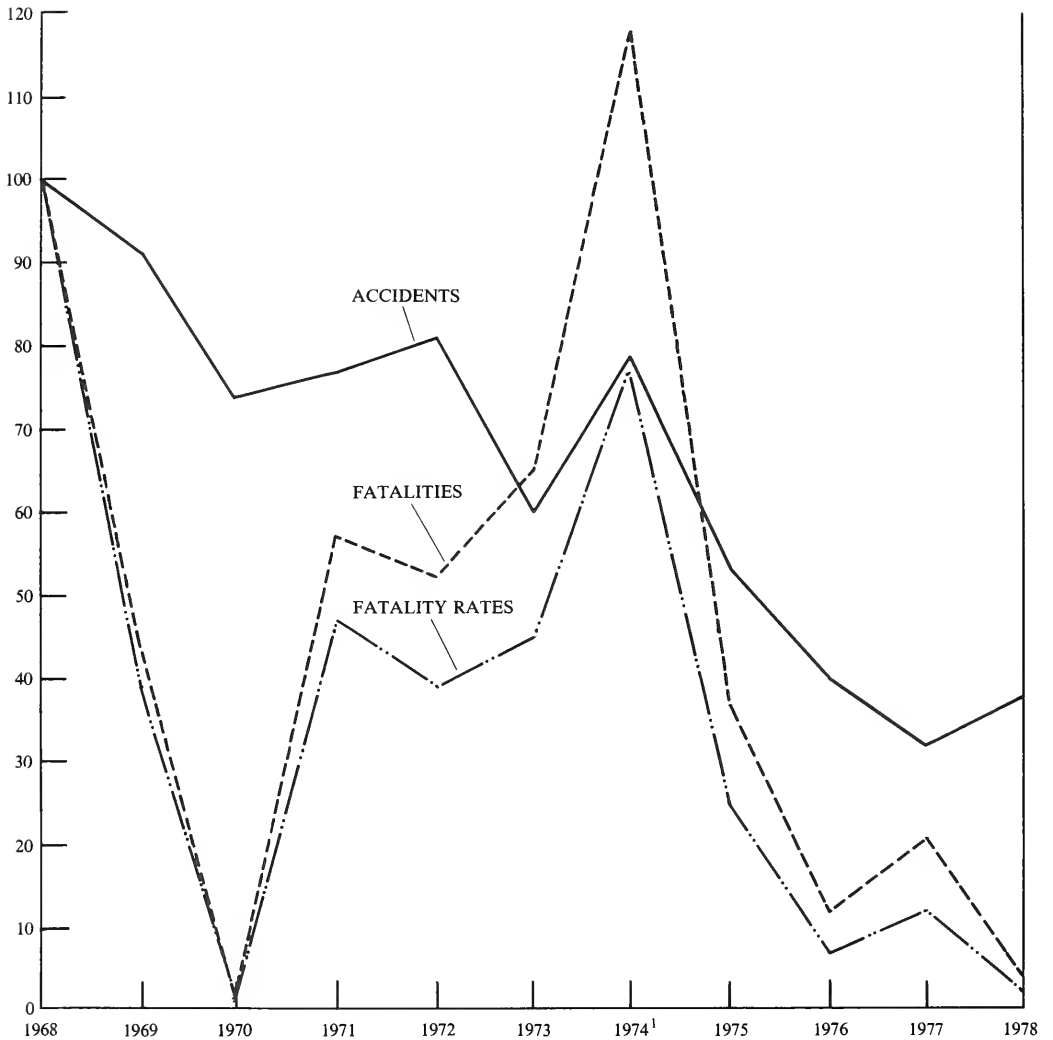


FIGURE 3. Relative Changes in U.S. Air Carrier Accidents, Passenger Fatalities, and Fatality Rates, Calendar Years 1968–78.



[1] Excludes passenger deaths that occurred in sabotage accidents.

FIGURE 4. Relative Changes in Air Taxi Total Accident and Fatal Accident Rates, Calendar Years 1974–78.

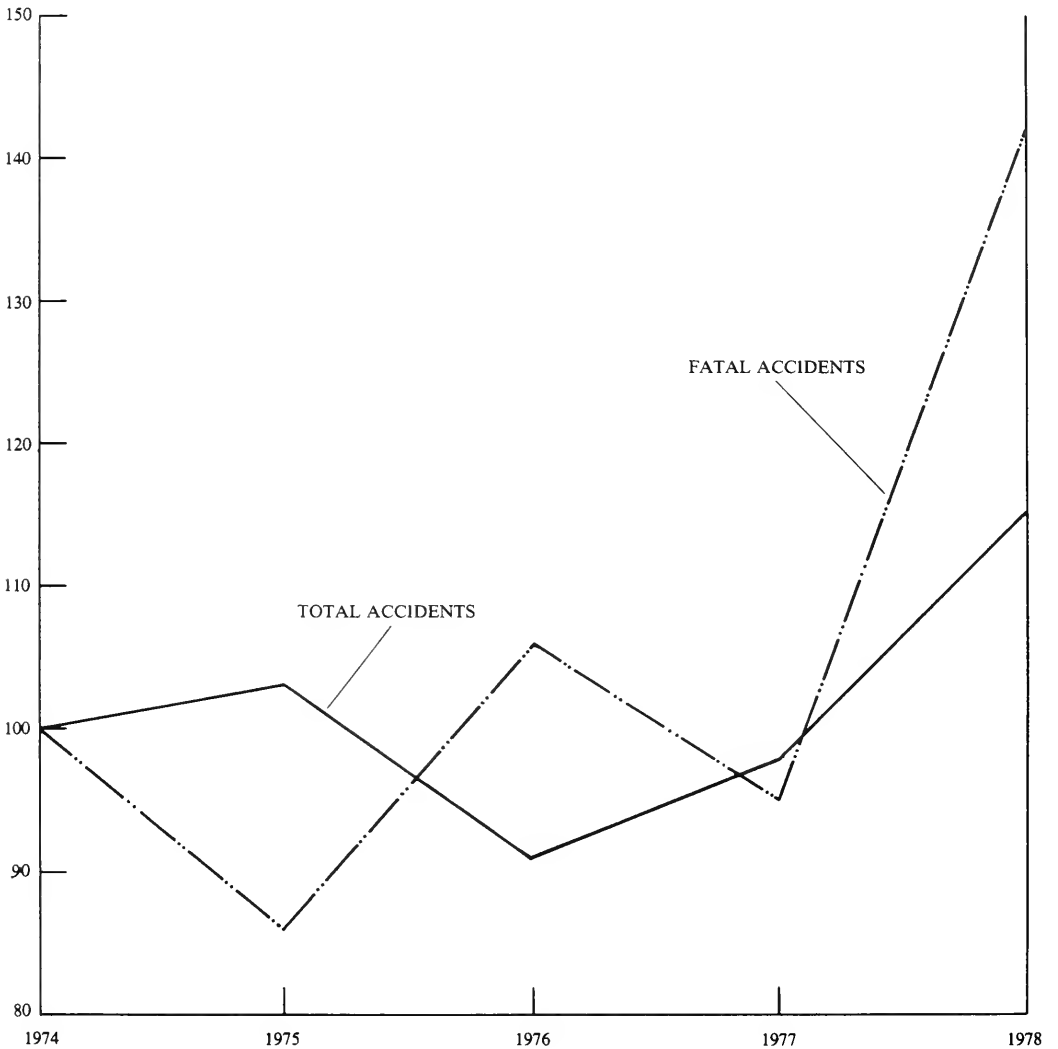


FIGURE 5. Relative Changes in General Aviation Accidents, Fatalities, and Accident and Fatality Rates, Calendar Years 1968–78.

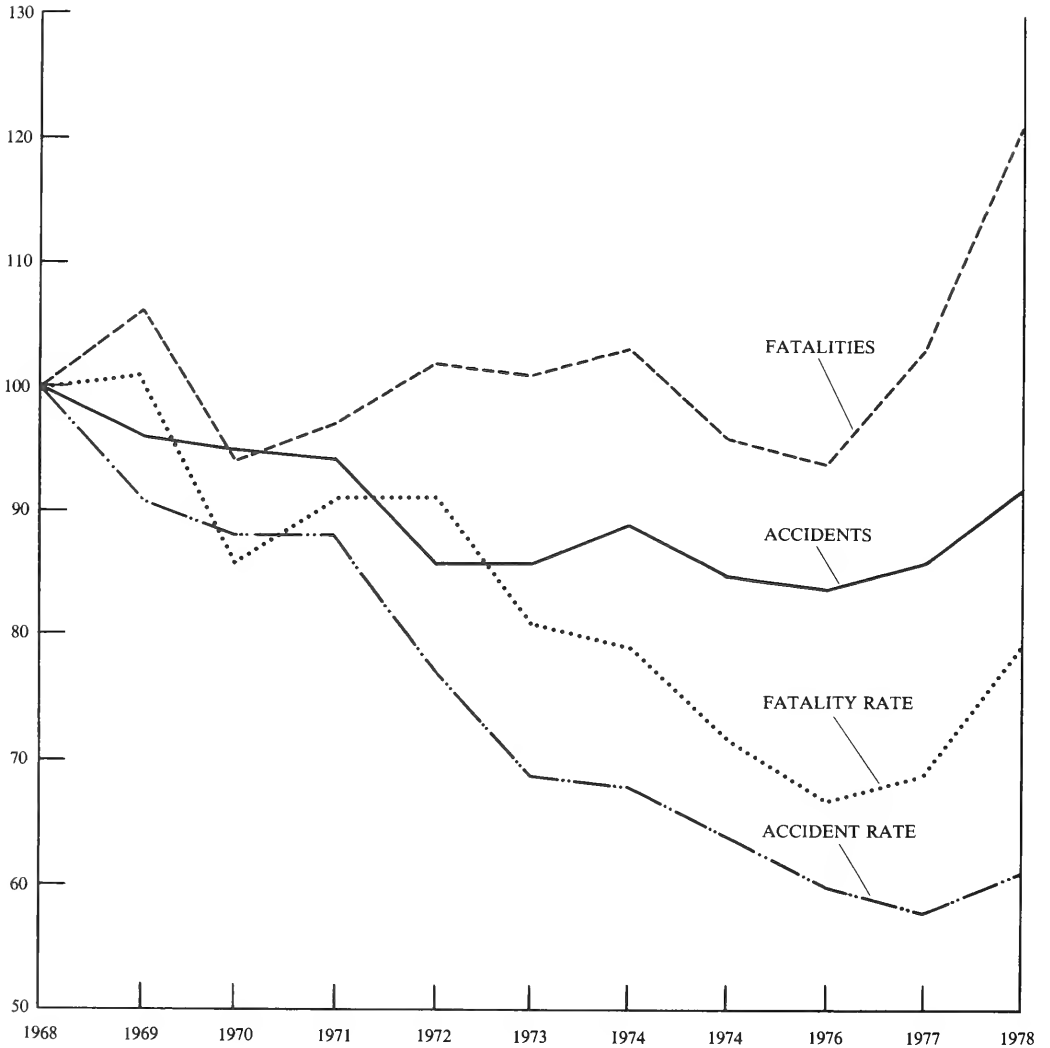
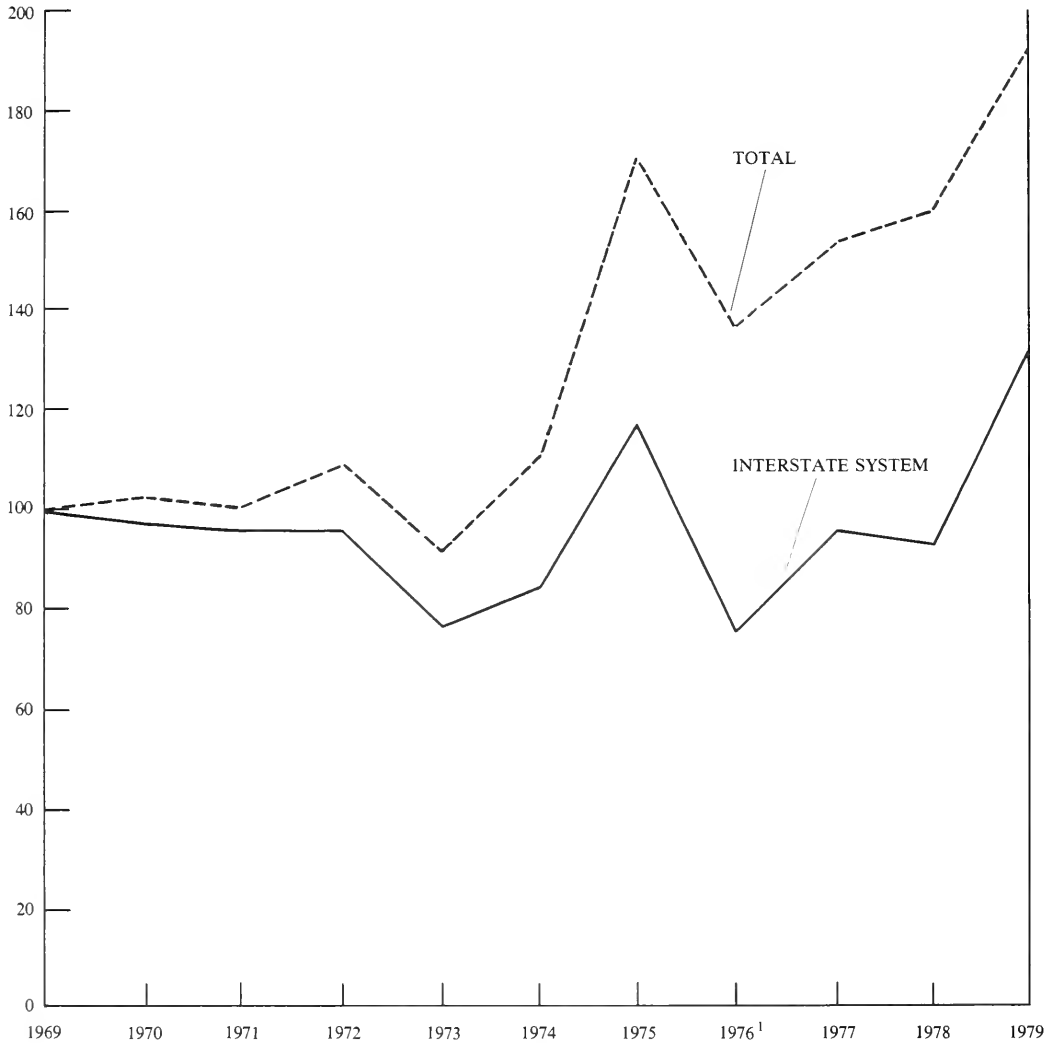


FIGURE 6. Relative Changes in Total and Interstate System Highway Obligations, Fiscal Years 1969–79.



[1] Includes the Transition Quarter, July 1, 1976 to September 30, 1976

FIGURE 7. Relative Changes in Amtrak Costs, Revenues, Operations, and Performance, Fiscal Years 1972–79.

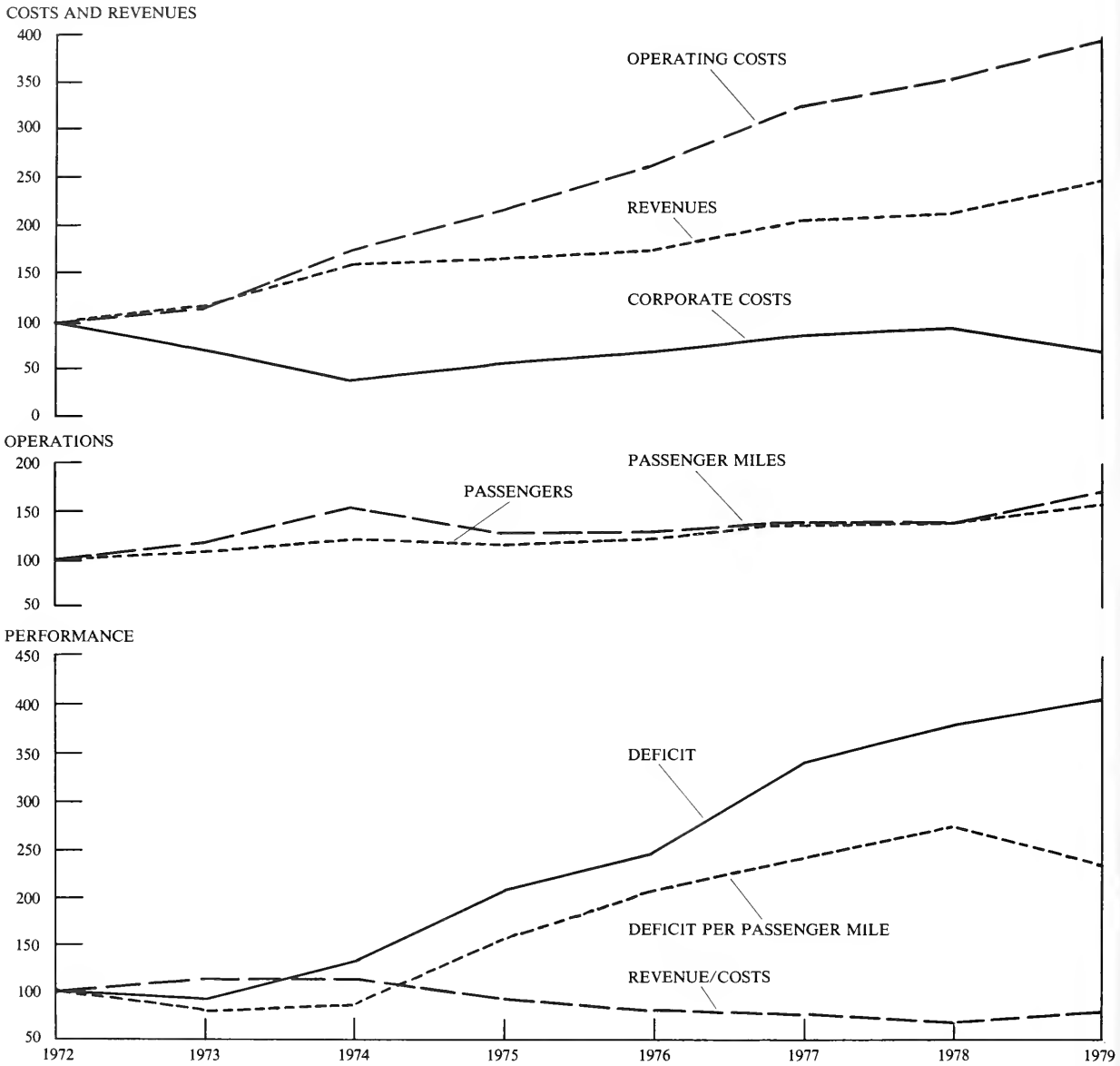


FIGURE 8. Relative Changes in U.S. Traffic Fatalities, Mileage, and Fatality Rate, Calendar Years 1977–79.

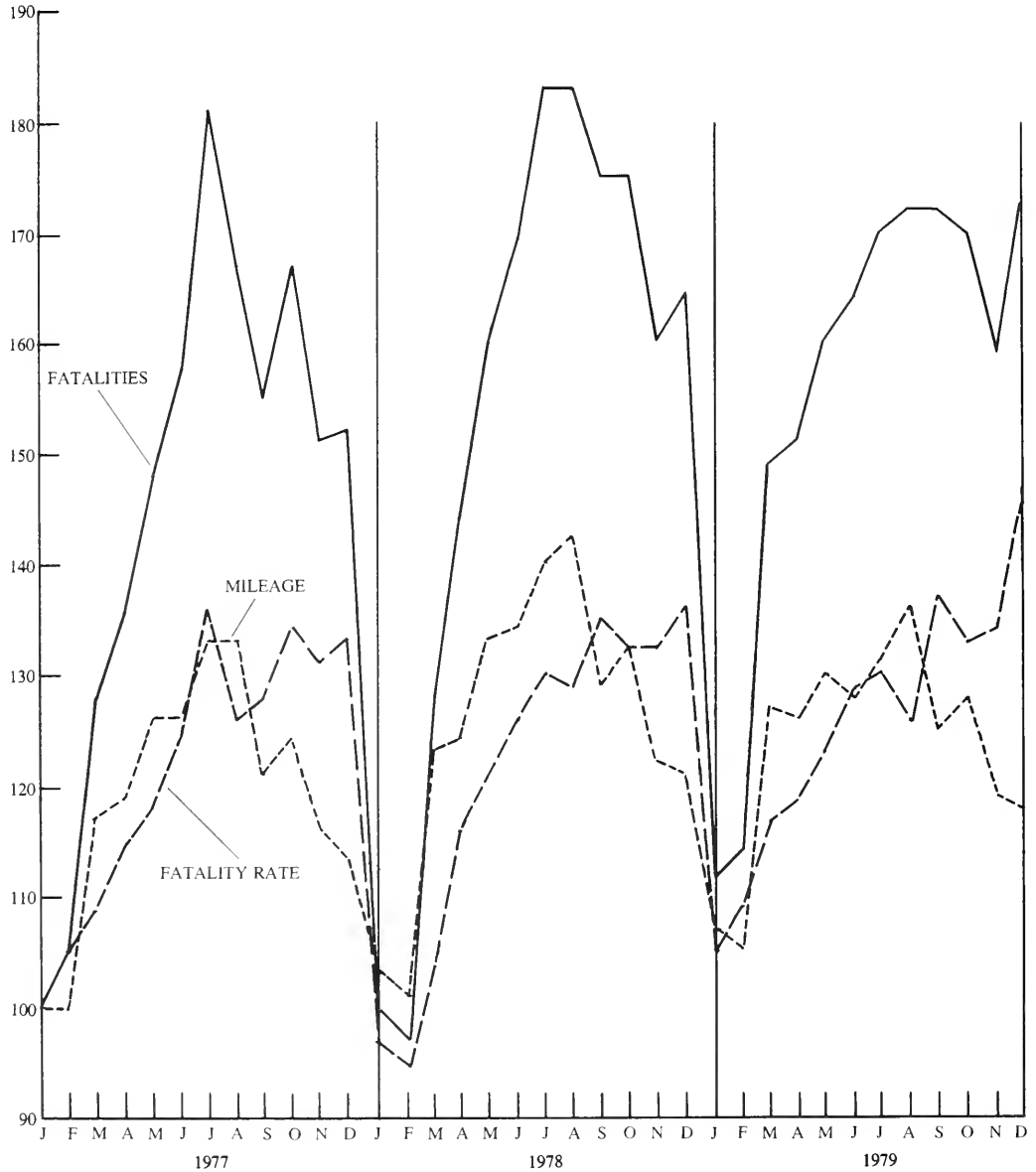
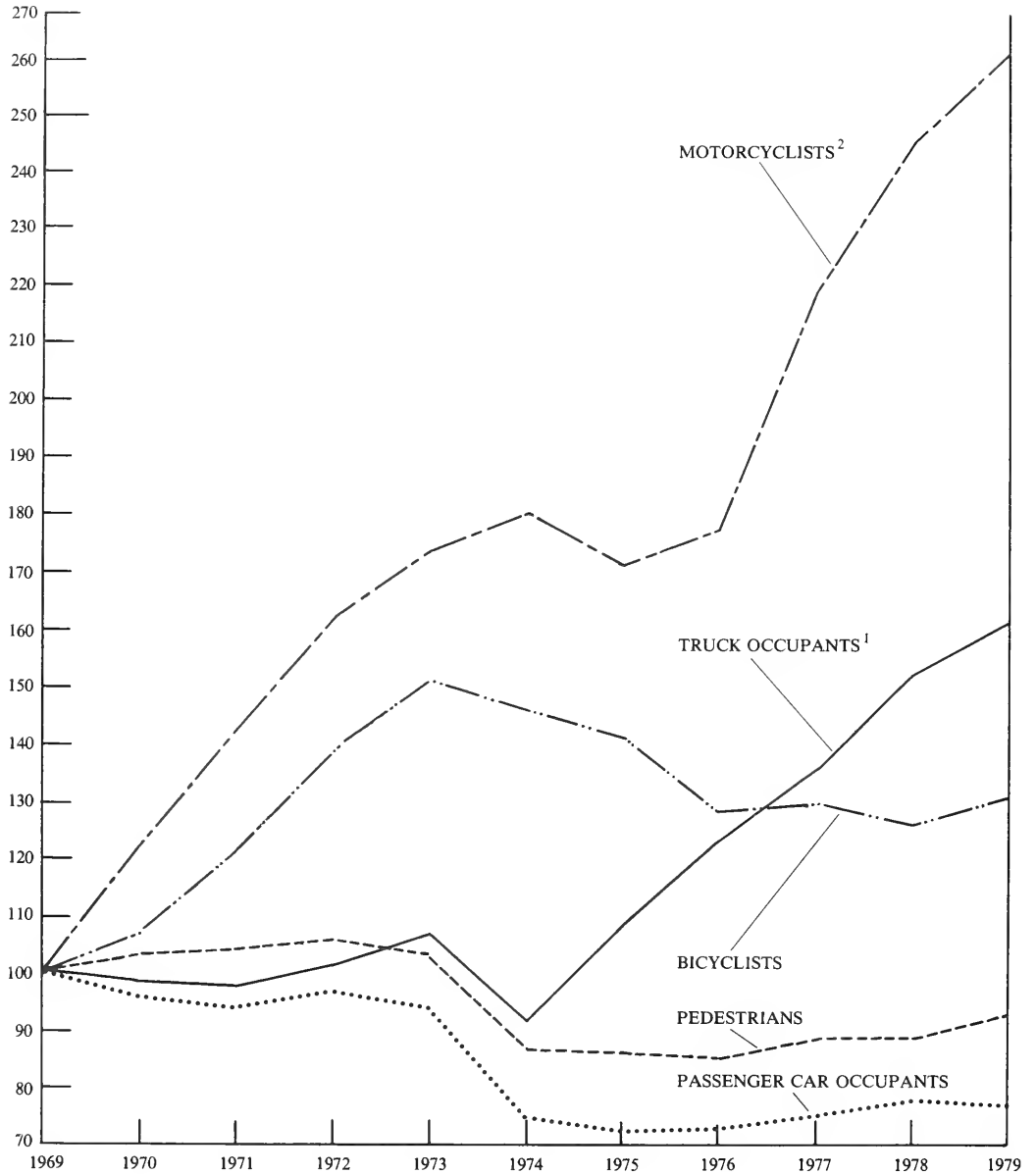


FIGURE 9. Relative Changes in Highway Fatalities, by Principal Categories, Calendar Years 1969–79.



[1] Includes pickups, vans, and heavy trucks
[2] Includes mopeds, motorscooters, and motorbikes

FIGURE 10. Relative Changes in Reported Gas Pipeline Failures and Casualties, Calendar Years 1970–78.

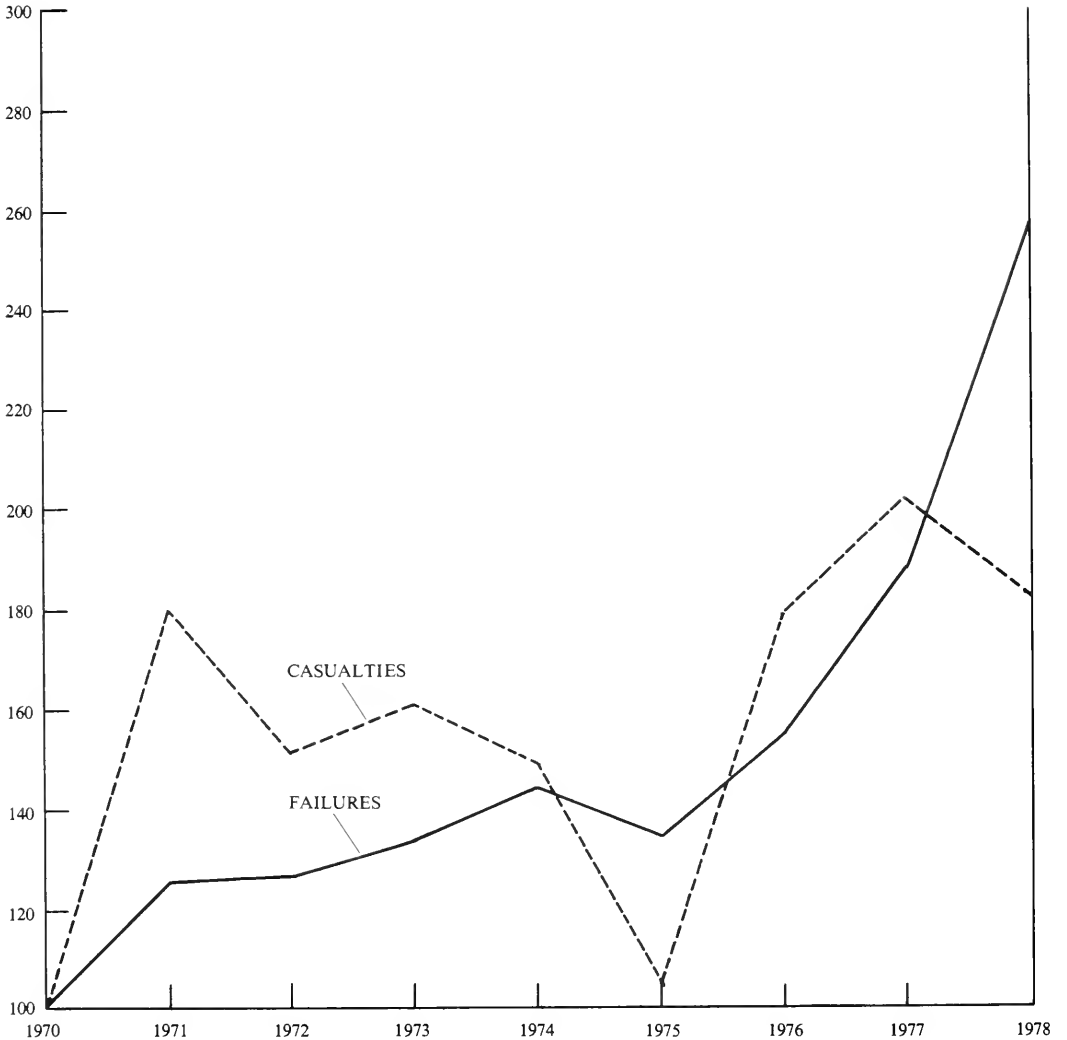


FIGURE 11. Relative Changes in Reported Liquid Pipeline Accidents and Casualities, Calendar Years 1968–78.